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ABSTRACT

Focusing on the role of the educational developer, the 19 essays in this collection provide a forum for educational developer practitioners: (1) to share their practices and insights; (2) to explore what it means to be an educational developer and instructional designer, and to give some philosophical reflection of the role; and (3) to clarify the professional role and explore the distinction between the educational developer and instructional designer. Individual papers discuss what it means in practice to be an instructional developer or designer, highlight the literature and theories underpinning their development activities, and give examples of research already undertaken and appropriate for the future. The intended audience is threefold: professional developers; those new to the field; and academic colleagues of instructional developers. (SD)

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Development, Design and Distance Education

Centre for Distance Learning

Michael S. Parer

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Development, Design and Distance Education

Development

Design

and

Distance Education

A Project initiated at the Thirteenth World Congress
of the International Council for Distance Education

Edited by

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Over the years of my professional life I have been supported by the very best research associates and secretaries who have kept my various projects on the move and in some semblance of order. Of course, to name some is to give the possibility of offence to others. But I wish to acknowledge Vene Tanian at St Augustine, Yarraville; Bronwyn Hugo at Migrant Education Television; Donna Robinson at Indiana University; Val Arthey at Deakin University; and more recently at Gippsland Institute, Melanie Inger, Vicki Bergquist and Tara Harle; currently, and most significantly, I wish to thank Robyn Benson who has the uncanny ability to concentrate, analyse and report on complex research data, and Rae Hill, whose experience, output and willing acceptance of my continuous and unreasonable demands are all things I now take for granted. I think she must have a team of elves who come in each night to assist her. I wish to thank them all.

AN INVITATION

This book's gestation has been almost four years, and is longer than I anticipated. The superficial reason is that communication is slow between contributors around the world. The more genuine reason is that I was hoping the issues of Educational Development and Instructional Design within Distance Education would come into much sharper focus.

I believe that we must all seek further illumination on these issues.

This prompts me to issue an invitation to readers of this book. If you see that your experiences and insights can contribute to this illumination, then please write a response or an additional chapter and send it to me. If there are a number of chapters submitted, then I would undertake to share them and seek to establish a small critical community at a distance. Later I would consider the publishing of a sequel to this edition. This would follow in the tradition of the method used by Terry Evans at Deakin University and Daryl Nation at Gippsland Institute with their book - *Critical Reflections on Distance Education.* They shared all chapters and arranged various teleconferences and an on-campus seminar with all participants in an endeavour to establish such a critical community for their book.

This process fits very closely with my notion of the role of academics in Higher Education. Those of us involved in these institutions should not see our role as simply the transmission of knowledge and the training in skills. Rather we must participate in generating new knowledge, new insight, new skills. Unless we participate in this process of research then we all too easily stagnate as teachers and can become more like the purveyors of packaged items in a supermarket.

And so, if you feel strongly about the issues of this book and can add further illumination to the issues of Educational Development and Instructional Design in Distance Education, then please write to me.

Michael S. Parer

Reference

Evans, T. and Nation, D.,1989. *Critical Reflections on Distance Education.* Deakin Studies in Education Series: 2, The Falmer Press, Lewes.

Clarifying Development and Design in Distance Education

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It is always interesting to join educational developer and instructional designer colleagues and consider the range of activities that emerge in discussion about our professional work and see how some activities come into prominence and then drift out over the years.

At a recent such gathering a discussion included the notion that our staff are our students: that our task is to change their perspective to teaching and learning and so help them to think differently about student learning and become critical of their own teaching. Besides the goal of improving learning and enhancing the status of teaching, there seemed a move towards influencing change in practice within institutions. In the past, it was suggested that the aim was to influence each individual's educational processes but more recently it has swung to influencing institutional policies, processes and structures that lead to the improvement of educational policy towards teaching and learning. Some saw the educational developer as the conscience of the institution with the assumption that improvement in the quality and design of courses leads to improved learning.

Many educational developers believed that they were being led through a process of refocusing their activities by Government agencies, especially the Federal Department of Employment, Education and Training. Staff development is now to be linked to appraisal, accountability and supervision of staff. Consequently, this now suggests a prime role for educational development units.

Thus, it is appropriate to ask constantly, 'What is the role of the educational developer'? There is general agreement that it is to assist with teaching strategies, to improve communication skills, to extend the use of group dynamics, to assist with appropriate assessment, to provide a role as surrogate student, to ensure that technologies are appropriately used and to develop policies and practices through research and so illuminate these teaching and learning activities within educational institutions.

Whether education development is a discipline of its own and whether it has specific areas to research is still open to considerable discussion. Even more heated can become the issue as to whether educational development is an academic career or simply a diversion. If it is a career, what is the promotional path? How are educational developers appraised? And why is it that so many fill out their roles in an idiosyncratic way?

Such has been the backdrop to educational development and instructional design in Australian Distance Education for some years and is the reason to offer an open forum for my colleagues to discuss these issues in the following pages.

Some use the terms Educational Developer and Instructional Designer interchangeably; others find it important to make clear distinctions. The idea for this book arose out of one of these stimulating and challenging meetings. This was the gathering of educational developers at the Thirteenth International Council for Distance Education Pre-Conference Workshops for developers, nurses and musicians in Melbourne: stimulating because it was a rare chance for those in this field to meet and discuss mutual concerns, particularly the ongoing need to clarify our own professional role; and challenging because Distance Education is attracting many newcomers to the field who wish to build on theexperience of practitioners.

The Educational Developers' Workshop was attended by over 100 who saw themselves as the edgecutters of innovation and a specialist group to help the institutions improve their teaching and use of new technologies. In some ways participants saw themselves reflecting the experience at

The Open University in the United Kingdom which was the first institution to incorporate and institutionalise the use of educational developers in a university structure. There this was done with the Institute of Educational Technology which was taken on board at the very beginning of that institution's life. Within discussions at the Workshop it was obvious that educational development covered a broad spectrum of activities and that there was a lack of clear focus in agreement.

Some saw themselves clearly as instructional designers and these assumed that there was a best way of developing teaching materials. They felt it unfair that many wished to label them as behaviouralists. It was as a result of this rather earnest discussion that it was decided to include input from colleagues around the world and endeavour to seek clarification.

Thus, this book emerged with the aims:

> to offer a forum for educational developmer practitioners to share their practices and insights;
>
> to explore what it means to be an educational developer, and instructional designer, and give some philosophical reflection of the role;
>
> and so to clarify the professional role and explore the distinction between the educational developer and instructional designer.

Contributors were asked:

> to discuss what it means in practice to be an educational developer or instructional designer and to give some illustrations;
>
> to highlight the literature and theories underpinning their development activities;
>
> to give some examples of the research that is undertaken as a developer and also of what is seen as appropriate and desirable

research for educational developers and instructional designers in Distance Education.

The intention was not to offer the definitive statement of the terms Educational Development and Instructional Design, but rather to give contributors the freedom to explore these areas through their individual experiences.

There was to be a three-fold intended audience for this book:

firstly, the professional developers;

secondly, those new to the educational development field. At the Melbourne Workshop there were two groups - experienced educational developers and those new to the field who wanted to learn as much as possible quickly and apply it to their activities;

and thirdly, our academic colleagues, both in the faculties and in administration, that they might gain a clearer picture of our contribution to the teaching, learning and research tasks in their institutions.

Instructional design has grown out of the behavioural sciences. There is an underlying belief that there is an appropriate way to design 'instruction' and this may well be true in technical tasks with their linear logic. Take for example, a Rover car with its precision engineering, its metal body and crafted parts. When dismantled, a problem is identified and the parts put together in the single appropriate way. Similarly, to describe how to use a hand weapon, the instruction should be offered in the appropriate and the best fashion. Further, the instruction can be tested on subjects and further modified until a 90/90 level is attained which was espoused in the US armed forces - that is ninety per cent of the students attaining a ninety per cent achievement ninety per cent of the time.

However, as we move to more complex areas of diagnosis, say in medical dislocation of the knee or vascular necrosis at the head of the femur, it is not so easy to design the appropriate or best instruction. Or, if we seek to analyse psychic aberrations in a mental illness it is even more difficult. Instruction and education become more obscure.

If we wish to design instructional programs to educate at a tertiary level we are not just indicating techniques of communication but preparing people to make complex professional judgments in fluid environments.
To overcome this, the behavioural scientist worked out the systems approach where needs are analysed along with the choice of media, the types of instruction and reinforcement techniques. However, these days the seeking of the secrets of good instruction and of motivation in education have given way from such analysis to studying orientation learning and to asking, 'why do some learn better than others'?

Educational developers have always been involved with innovation and technical developments — that is why they moved into the area of audio visual instruction and later to computing, teaching machines, language laboratories and microlabs. However, the real challenge remains ahead of the educational developer and instructional designer, and that is how to design adequately instructional material in complex human endeavours. It seems that the promises of technologies have rarely been fulfilled in education, and that there are always new promises and discoveries leading the educational technocrat along to greener pastures. Today there are the satellites, the cd rom, artificial intelligence and the laser disk.

As professionals, we should return to the central question of identifying the essential role of the educational developer. Today there are many responses to this. Some wish to identify issues of how to improve teaching in the sense of giving additional techniques and so follow the structure of the '53 better ways of improving' as Graham Gibbs discusses in his series of extremely helpful books; and the second way is to improve teaching and learning by understanding how individuals learn, following gurus such as John Biggs and Ference Marton. A third way is to incorporate new innovations into our methods and research such as textual design and the use of audio visual components, computers and group dynamics.

It is a truism that we live in an age of information explosion, where knowledge is exponential. Students do not need to know more and more facts. Educators do not have a task simply to give information - that of today will be superseded tomorrow. Education must give students the ability to use existing information and to tap new sources. They need skills to make sense of what is going on and how to use new information, to suss it out, to find what is happening in their fields, in the world and in themselves.

The educational developer in tertiary education must help this to occur and educational development must be linked to research, otherwise simple hunches are followed. To date our participation in research, and contribution through research, have been rather minimal.

Early this year my brother edited a book with contributions from 23 of his colleagues. His field is of the Antepartum, Intrapartum and Management is obscure to me. He is a Professor of Obstetrics, Gynaecology and Research Science at the University of Southern California. I read this difficult book for two reasons. Firstly, I suppose because we all have an interest in the details of life and birth; and secondly, because I was interested to try to understand the refinements of my brother's professional life. But as I read it I became aware of the difference between this field of medical science and that of the field of education and instructional design.

The field of childbirth is of great importance to ordinary people. They want, indeed demand, that the very best of scientific minds, resources and technology be used to minimise the traumas and disasters of birth defects. Further, there is within both the general and the scientific community the commitment to improve, whatever the expense. Failures and unsuccessful treatments are severely criticised and rejected.

I compared this to educational development and instructional design in tertiary education and Distance Education, where we have tended to potter along and prepare research reports, be open to criticism, but not to be severe in condemnation of failure. Educational development and instructional design have a long way to go to get to the level of scientific rigor which is regarded as normal in the field of obstetrics.

Within a teacher education program instructional planning is an important component to prepare a course of action to carry out over a year, semester, month or day. In a sense, teachers' plans constitute an instructional design process in which they develop a script to carry out interactive teaching. Research shows that such scripts can exert influences on teachers who are generally trained to follow a pattern such as: to specify behavioural objectives; to specify students' entry behaviour, knowledge and skills; to select a sequence of learning activities to move students from one entry behaviour to the objectives; and finally, to evaluate the outcomes in order to improve planning.

This prescriptive model of planning is consistently taught. However, it is the model that is consistently not used by teachers in designing their instruction. Obviously there is a mismatch between this prescriptive planning and the demands of the classroom. The mismatch arises because there is a multiple imbalance between the educational goals of instruction, the students' learning goals, the teacher's need to maintain a flow of activity during the lesson; and, of course, the need to achieve some semblance of management and order.

While most of us can recognise this mismatch in the classroom there is a tendency to assume that in Distance Education we can engage in prescriptive direction through controlled learning paths offered in Study Guides and Learning Packages. However, developments in Distance Education indicate that there is a move from exposition and direction of students into far more activity based study materials, for we recognise that there are many variables in operation that make it impossible to have a linear design in instruction.

Within teaching, instructional tasks are highly complex and contain many elements. They include not only the content of the subject matter to be taught but also the materials that the students observe or manipulate, the activity that is to be done during the learning process and the goals that are to be attained. Such goals are quite different from behavioural objectives, and also must cater for a wide variety of students with particular abilities, needs and interests.

At first sight it may seem that the distance student is isolated, singular and open to direction through printed study materials.

However, this is not so. Our research has shown that they come from particular backgrounds, with differing motivations and orientations to study, all of which make them use study stimulus materials in their own individualistic ways.

As I have re-read the contributions about our professional activities which try to bring about educational innovations — at times with difficulty and, if not with blood, sweat and tears, then at least with considerable anxiety — I have a number of lingering impressions. The first is that we as educational developers are technologists, not just with machines and new things such as satellites, fibre optics and electronic mail, but with heavy concern for processes. Amid the use of these new technologies there seems to be the lack of a spark of humanness, of poetry, of joy, of human warmth in our work.

Many speak of the need for a theory and a theoretical framework. I would like to speak of our need for poetry, for humanness and nurturing of new developments. While these elements are in our personal and family lives, they seem absent from our professional lives. The lack of joy may be associated with our being unappreciated. The lecturers have the nourishment of the students who often spark with fire in their bellies, but we rarely have joy from the course team that we work with. If there is no enjoyment in our work as educational developers, perhaps we should reconsider how we can best spend the few fleeting days that we have on this tiny ship in space.

And music ... we are continually told of the link between maths, science, technology and music, that all are developed from the same lobe of the brain and that Einstein with his mathematical mind loved the violin and had a close friendship with Suzuki. Where is the music, the rhythm that shines in our work? And why is it missing from the pages as we write about our professional activities? As we work among new frontiers of satellites, tele-conferencing and research into text design, communication and student learning, I look for greater humanness in our activities.

Having said this, I am full of admiration at the earnest commitment of my colleagues as they discuss their work in the following pages.

Noel Jackling

is a lawyer and an experienced and enthusiastic practitioner of development and design in Distance Education. His contribution mingles some history from the Australian scene and his own weaving to discover his professional role as a course developer.

Noel began with the assumptions of the behaviouralist theories in which educational development offered a type of cookbook solution. This led to certain dissatisfaction, not the least of which was being forced into the mould of the production process and his energies diverted to keeping schedules and getting copy to the printery on time.

His rich experience has led him to explore the role of a professional developer in Distance Education and he has found the concepts most helpful are those of joint venturer, surrogate student and educational innovator.

Jackling's contribution comes closest to what I had in mind when I invited contributions to this book. He has mixed his personal experiences with wide reading of theory and practice and shown how his own professional understanding and activities have grown over the years.

Margaret Haughey

Margaret Haughey's reflections on the role of the educational developer provide an important contribution in setting the boundaries for discussion, because they strike directly at the source of many of the conflicts associated with educational development: that of differences in philosophy among team members. She considers that the context in which educational development occurs is critical in determining whether the developer's goal, of facilitating learning, will be achieved. She contends that the developer's most critical role is that of adult educator, and that the first meetings with the content writer are crucial.

If the developer does not play an active role at this stage in clarifying assumptions and values pertaining to topics such as: Distance Education; the nature of knowledge and course content; the world of the adult student; the teaching/learning process; evaluation of students and course content; then divergence in expectations may become apparent too late to maximise the pedagogical qualities of the teaching material.

David Meacham

David Meacham's contribution must surely provoke some reaction. He speaks of design as being irrational, similar to instruction when devoid of military and industrial origins. He poses instructional design as theoretically unsound and practically inadequate.

From this start he moves on to explore and exploit his own experiences and provides a compromise model more in the line of process for educational development. He cautions that his model must be emancipatory rather than be slavishly followed, and should be informed by both intuitive and theoretical wisdom.

Meacham flags a great warning that the neglected area in instructional design is the nature of the teacher. He explores the definitions of educational development, instructional design and educational technology. He sees the role of developer as mediator and draws heavily on the spectrum of literature. His contribution illuminates these without coming to the conclusion of specific distinctions between them.

Geoff Arger

Geoff Arger begins by noting the lack of a clear identity for professional developers as evidenced by diversity in their own professional backgrounds, in the title and status of their employment, and in academic perceptions of their role.

To try and clarify the meaning of what the incumbents do in various development situations, he distinguishes between the roles of Educational Developer, Instructional Developer and Instructional Designer, relating each role to the stage the institution may be at in the development of distance teaching: theTransformer stage as the mechanisms for Distance Education are established; the Multi-Media Transformer stage as multi-media courses are established; and the Generator stage as the process of developing unique Distance Education materials begins.

He sees a role for the educational developer at all three stages; for the instructional developer at the second and third stages; and the instructional designer only at the final stage, a decreasing breadth of function possibly indicating descending order of seniority. However, just as institutions may not fit neatly into any one stage, so too a single person may perform one or more of the above roles. This conceptualisation provides a helpful link between task, title and status, but it would obviously need to become widely recognised and accepted to assist both communication between, and the practice of, professional developers, as well as academic attitudes towards them, and ultimately the quality of the teaching materials.

John Fenwick

Like Arger, John Fenwick addresses the confusion surrounding the educational developer's role since its diversity has led to the adoption of a variety of terms to describe it. He supports the use of the term Educational Developer in preference to Instructional Designer, because 'educational' places attention on the learner rather than the instruction, and the term 'develop' encompasses design and allows focus on a broad range of life-long learning skills. Fenwick sees the educational developer as a mediator between lecturer and students whose aim should be to produce the best possible communication strategies within the resources available. Given the particular demands of Distance Education, he sees a major role as that of change agent. An analogy is made between learning and property development to illuminate the roles of student, developer and academic staff.

Fenwick illustrates the educational development role with reference to activities at Lincoln Agricultural College in New Zealand and concludes by discussing the relevance of the seven contemporary teaching models reviewed by Bääth in 1979 to educational development in Distance Education.

Diana Carl

Diana Carl offers a refreshingly optimistic solution to the kind of difficulties often expressed by instructional designers. Through astute reflection on her experience in instructional design, she discusses the nature of, and rationale for, the 'guerrilla tactics' which she sees as necessary for instructional designers to 'infiltrate' the setting of higher education. She considers that the need for these tactics is intrinsically related to organisational structure and function.

The top-down hierarchy and competency-based knowledge outcomes which assist the role of the instructional designer in non-educational settings, are reversed in higher education, where processing of knowledge is the business of the organisation and where organisational structure is upturned and dispersed since faculty, in effect, grant administrators the right to administer, but not to control, and since knowledge outcomes are as many as the faculty employed, and are continually in a state of flux.

Thus, teaching materials need to be flexible enough to accommodate multiple and changing states of knowledge as well as overcoming the academic tradition of dependence on 'face-to-face' teaching held by those who have power in the organisation.

Consequently, 'guerrilla tactics' are seen as a means of combatting those 'stronger regular forces' and the tactics suggested include amicability, maximisation of opportunities for dialogue, and utilisation of favourable circumstances or structures accepted by the power group. The facilitating role of the change agent is hence more appropriate than prescription.

Terry Evans

Terry Evans is not so optimistic and his concern is about factors which limit developers in fulfilling their roles. His particular interest is in the way the role of consultants, when working with course teams, can be reduced to merely fiddling with the tomes that the teams turn out.

He sees this to be the result of the dominance of text in shaping distance teaching, with related inattention to pedagogical issues and other media compounded by the often lowly status of the consultant.

He stresses the need for critical reflection on the Distance Education process if student learning is to be emancipatory rather than entrapped in pre-packaged print.

David Murphy

Like others, David Murphy begins by noting the confusion of jobs and titles associated with the developer's role. However, his interest is not in linking tasks to titles; he simply states that he prefers to be called an Instructional Designer because this term implies activity and creativity, while the term Educational Developer has an administrative ring to it, a distinction probably not inconsistent with Geoff Arger's view.

Murphy's focus is, rather, on how the de facto leadership role of the instructional designer, resulting from knowledge of process, can be adapted to development activities in order to reduce stress associated with a position possibly lower than that of academics in the hierarchy of the institutions, and associated with the fact that instructional design is often difficult to tie down to strict procedures.

To study the match between leadership styles and situational variables he uses, with a small group of sixteen instructional designers from Australia and Hong Kong, Feidler's contingency theory of leadership which is based on the assumption that leadership styles are fixed and that task-oriented leaders will perform better in situations of high or low control, while relationship oriented leaders will be more effective in situations of moderate control.

The value of the theory is that it is a tool which instructional designers can use to analyse their leadership styles and the situations in which they operate. This may suggest possible changes to the elements of the situation they are in, if they are experiencing problems in the instructional design process.

Janet Jenkins

Janet Jenkins, from her 20 years experience in course development, argues for a course development model which would probably have considerable impact on the kind of slippage or mismatch described by Ross and Lockwood; one which would give strong control of the process to one person, whom she terms an Editor. She considers that by having the facilitation of student learning as a central concern, the editor is well placed to co-ordinate and manage the whole development and production process. She sees this model as being appropriate whether development is conducted via course teams or some other means.

She focuses on some areas which require particular attention in fulfilling this editorial role. These include the importance of defining individual roles when course teams are used and the need for course planning which encompasses the order and content of the material to be covered, and the use of media. She sees staff training as a central part of the editorial role, particularly as many university lecturers are not accustomed to the learner-centred approach of Distance Education. The development of writing skills is a significant aspect of this training. She concludes by emphasising the need for training of editors themselves, and by offering a model of course production which incorporates training and reduces the burden on editors.

Bob Ross

Bob Ross uses his wide experience in course development to discuss the ways curriculum outcomes can 'slip' from the intention of those developing the curriculum. He explains how the role of the educational developer can reduce, though not necessarily eliminate, this kind of slippage.

He sees slippage as a feature of the function of course teams, particularly when they are working on inter-disciplinary courses, and he considers that its avoidance requires, among other things, adequate early teamwork on the structure of the course, continuing co-operation between subject specialists on the content of their blocks of the course, as well as continuing scrutiny to ensure that the blocks are linked progressively through the content of the course.

Lack of time, use of 'outside' personnel and the simple duration in time between original and the final production of material can all contribute to slippage.

Particular problems are encountered when packaging the largely oral on-campus courses into print based material for off-campus students (the New England model). The design of assessment items, and assumptions made about how students will use the package, offer further potential for slippage.

Ross sees an important role for the educational developer in overviewing course development as a member of a course team, but notes that asone member the contribution can be limited. However, this member's potential for detecting difficulties makes the role an important one.

Arun Gupta

Arun Gupta emphasises the need to develop a genuinely learner-centred instructional system for Distance Education. He summarises, from a theoretical perspective, the rationale, methods, advantages and pitfalls of instructional design to illuminate the shortcomings of current practice. The limitations and potential of instructional design are then illustrated by reference to Distance Education in India.

He sees the lack of a central focus about the needs of the learner - despite rhetoric to the contrary - as one of the major limitations to effective instructional design. Efficient instructional design presupposes careful preparation of pre-packaged material which fosters an inflexible system unresponsive to individual students.

He notes further than while the 'course team' approach creates an integrated model for instructional design, compared to the 'editorial' role which resulted from the 'traditional' subject-centred approach, it has not been validated by adequate research into the effectiveness of instructional design, the use of different media, time and cost factors, and the efficacy of the course team itself.

In India careful planning and preparation of course material has begun at the Indira Gandhi National Open University, overcoming former obstacles such as lack of policies, guidelines, staff and resources, including time. The extent to which sustained learner-centred instructional design will be achieved at this institution remains to be seen.

Sikhanysio Duke Ndlovu

Sikhanysio Duke Ndlovu reflects on the importance of the educational developer's role in a developing country. Beginning from the assumption that education is a right and of benefit to the individual and the nation, he writes of the educational developer as an agent of socio-economic change and political development who should research and identify ways of meeting the educational needs of the people.

Building on his own experience as an educational developer in New York, Zambia and Zimbabwe, he writes, like Arun Gupta, of the importance of learner-centredness in Distance Education and of the strides made in Zimbabwe towards introducing multi-media distance teaching through the use of radio, video cassettes and print, along with contiguous tutorials. He refers, from his experience in Zambia, to the need for providing extra incentives for distance teaching faculty when using a dual model, and includes the criteria and standards developed in Zimbabwe for course writers to follow. He ends by emphasising the need for further development and research to provide new ideas and Distance Education methodologies.

Judith Kamau

Judith Kamau's description of the role of course developer at the College of Education and External Studies in Kenya is similar to that described by Janet Jenkins. The course developer is involved at all stages of course planning, development, preparation and implementation.

As a member of a course planning team the developer has a partly educational, partly administrative role and is responsible for recruiting, briefing and training course writers, monitoring the writing process, and synchronising print with other media used. The course developer edits the written material and assesses its suitability for the learners, using subject specialists to verify content, before submitting it for printing.

The course developer then recruits and trains tutors and monitors assignments to check that all lessons have been tested. Feedback is gained from assignments and tutors for use in course revision.

Fred Lockwood

Fred Lockwood draws on the literature, interviews with staff and students, and his experience at The Open University to focus on a specific aspect of the kind of slippage discussed by Ross - that related to the use of activities in texts. He suggests that characteristics of both staff and students contribute to a mismatch between theory and practice.

He considers that the mismatch begins with evidence of a discrepancy between the 'espoused theories' held by authors (i.e. of the benefits to be derived by including activities in texts) and their 'theories in use' which result in the implementation of strategies which do not allocate sufficient time for completion of the activities, thereby increasing stress on students. Consequently, although the students interviewed could identify potential benefits from completing the activities, limitations in time discouraged them from doing so.

There was further evidence that students tended to degrade activities, display undue deference to comments of teachers, and feel guilty or inadequate at not completing set tasks, suggesting that even the 'espoused theories' were not adequately based on students' needs and responses.

The study flags two warnings for course developers: that of allowing discrepancies to develop between 'espoused theories' and 'theories in use' and that of basing practice on untested theory.

Joe Ansere

Joe Ansere, like Sikhanysio Duke Ndlovu, describes the educational developer in action in a developing country, noting some of the pitfalls of innovation in this setting.

He describes a modular teaching training program in Ghana which covers the first two years of a four year course designed for practising teachers who do not have a teaching qualification. Problems have resulted from lack of autonomy due to an inappropriate administrative structure; limited capacity; difficulties in setting selection criteria; geographical distribution of students as opposed to centralisation of the agency; organisation of residential sessions; deficiencies in tutor support; non-completion of the modules; and dependence on foreign aid.

Ansere emphasises the dangers of proceeding with implementation before development is completed as the simultaneous handling of two tasks is a great strain when resources are slender, and the inability to support the system thoroughly may threaten the whole program.

Lewis Elton

Lewis Elton asks 'Is Educational Development a profession?' This is a pragmatic question for practitioners and an important question for those who depend on developers and designers. He argues that a great lack is career structure and that this leads to brain-drain with the best practitioners departing. My experience would have to say this has been the case in Australia.

Elton stresses that Distance Education courses are permanent and public and because of this have a greater need for developers than teachers enclosed in a classroom. He touches on many critical features in the discussion of the roles of the developer and designer, pointing out that the rational development of a course is a professional craft that includes considerable interpersonal skill and a small element of technical input. He believes that the term Instructional Designer focuses attention on the technical aspects, and for this reason prefers to use Educational Developer.

Bearing in mind comments on this issue from other contributors, the point cannot be lost on the reader that the use of an appropriate term for our profession is a significant issue that repays discussion and clarification.

Liz Burge

Liz Burge makes a convincing case for exploring and understanding the Educational Developer's role by going 'inside' to the experience of practitioners and drawing it 'out' to generate new theory, rather than attempting to adapt the theories of others and feeling defensive if they do not 'fit'.

Consequently she proposes new three 'Rs' - reflexivity, responsiveness and reciprocality - based on the premise that thinking and learning should be organised from the 'inside'. Her theory has much to offer to enhance both the practice of educational developers and their understanding of themselves: this interactive process has implications for generating dynamic, creative and confident thinking - an invaluable asset in extending and confirming the body of knowledge on which the profession is based.

Ulku Koymen

The need for a theoretical base of educational development and instructional design in Distance Education is paramount, and this theme is explored by Ulku Koymen. Theory grows over time and out of experience and perhaps more importantly by collecting the wisdom of the gurus — the great practitioners of the field. Hypotheses that are too easily accepted in any field as a theory, and then used as a basis for practice, can all too easily lead up many blind alleys. A new discipline like instructional design quite rightly seeks and gains insight from other older and accepted fields like philosophy, psychology, typography, business, law and medicine.

Ulku Koymen opens out the theory of instructional design and draws on the leading theorists such as John Baath and Börje Holmberg, and their contributions to the theory of design in Distance Education. She presents an instructional design model for the organisation of instructional materials at the Open University in Turkey. Such a practice could be considered by other major providers and would, I believe, enhance the practice of institutions who teach at a distance.

Alistair Inglis

Alistair Inglis gives an interesting historical sketch of the emergence of instructional design in Australia; and also of the derivation of instructional design in the U.S. from the training needs of the armed services. These origins and theories developed by Gagne and Briggs explain for me why instructional design continues to be most successful in the technical area of training such as in the armed services and in automobile maintenance; and why instructional design has had a turbulent time gaining acceptance in tertiary education where professional and complex judgments are required. Inglis rightly pleads for an extended theory and argues that instructional design is an integration of many already accepted skill areas. He believes there must be an extension in areas of 'deep' rather than 'surface' issues if instructional design is to be accepted as a profession.

His historical sketch identifies the valid political rationale for initially going for a surface or publication model in Distance Education with glossy covers, typesetting, external printing, and so on, to impress the academics and gain the endorsement of politicians. However, those short term gains appear to have led quickly to the area of instructional design being bypassed by many academics who feel that with a few tricks of those trades and new desk top publishing they no longer need the instructional designer as a specialist.

Inglis' sketch also gives an explanation that helps us understand why so many appointees to these positions have sought to develop their professional role from their previous experiences.

This chapter reinforces the great need to develop a theoretical base for the field of development and design in Distance Education. This is a task and challenge that lies before us all.

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PART ONE

Seeking a Resolution of Development and Design Issues in Distance Learning

CHAPTER 1

Weaving My Own Design

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Those Halcyon Days

In 1981 I came to the School of External Studies at the Royal Melbourne Institute of Technology (RMIT) and commenced life as an instructional designer. It was back in the days when there was no Graduate Diploma in Distance Education, and no instructional design course. People were grabbed from any discipline or, preferably, from a range of disciplines and thrust into the field of instructional design of course materials. I joined an engineer, a philosopher, a mathematician, a physical chemist, and several teachers all of whom had forsaken their 'former lives' to join the ranks of a newly emerging profession.

We were initially called course co-ordinators and our role was partly instructional design, partly editorial and partly management of the progress of course development. An editor was also a member of the group. We were under the headship of A.E. (Jerry) Grimwade who in 1976 introduced instructional design to tertiary education in Australia by establishing a group of instructional designers as a new component in a significant existing external studies operation. For some time it was to be Australia's largest assembly of instructional designers. Jerry was the second president of the Australian and South Pacific External Studies Association and undertook the publication of the first issue of *Distance Education.*

The team debated various approaches to the design of course materials, the nature of the instructional design brief, the pros and cons of being a designer in one's own discipline, the role of audio tapes, media selection, page design, surface design and 'deep approaches' and editorial issues. For much of that period up to 1982 we were primarily supported by that now aged technology, the IBM golf ball typewriter, but had the luxury of an

IBM composer for the insertion of headings in bold typeface. We formed course teams with subject specialists, academic co-ordinators and graphic artists.

I had come out of a background in law, having moved from legal practice to legal education at the Leo Cussen Institute, which offered a practical training course for law graduates from the University of Melbourne and Monash University. The Leo Cussen Institute was my initiation into working at a tertiary education institution and into materials development. So when the time came to be interviewed for a position in the RMIT School of External Studies I proudly took along some of the materials I had developed at the Leo Cussen Institute. These were soundly based on educational objectives, which were expanded ad nauseam to the finest detail, most at recall level. Testing the attainment of objectives had been addressed, but surface design and page design were almost entirely absent. Jerry Grimwade asked me in that interview how I would seek to improve those materials! It was one of those ghastly moments! I mumbled an idea or two and then hastily enquired how he would improve the materials. I was successful in getting the job!

At RMIT I gradually became inducted into its system and learned a lot about instructional design and editing. But much of what we did was mechanical. The same old routines were applied in most instances. 'Has the writer developed educational objectives?' 'Are these objectives implemented in an ordered sequence?' 'Are there enough sub-headings?' 'What about including more in-text questions?' 'Do the assignments test the objectives?' 'Is there a real learning path?' 'What kind of advance organiser would be appropriate?' ... and so forth. All of these questions were part of the application, and a fairly prescriptive application, of the systems approach to instructional design. For all of the strengths of the instructional design model, I gradually came to realise that there were significant areas in the life of the instructional designer where the model was over prescriptive or distressingly silent! So, born out of growing dissatisfaction, I began to formulate some ideas for modifying the application of the instructional design model, ideas that generally came into focus when stimulated by a colleague, a visitor or an article. It is some of these modifications that I would like to explore further.

The Instructional Design Model

The instructional design model is described, for instance, in Kemp (1971) and Dick and Carey (1978). The latter describe the instructional design model as one where the user progresses in linear fashion through the following nine steps:

1. Identifying an instructional goal.
2. Conducting an instructional analysis.
3. Identifying entry behaviours and characteristics.
4. Writing performance objectives.
5. Developing criterion-referenced tests.
6. Developing an instructional strategy.
7. Developing and selecting instruction.
8. Designing and conducting formative evaluation.
9. Revising instruction.

At RMIT the instructional designers were operating a simplified version of this model. We used a model with a feedback loop which proceeded from planning through development and implementation to evaluation, and which returned from evaluation via the feedback loop to re-planning. In the operation of the model, particular attention was given to aligning assessment with performance objectives. I cannot say that the model was rigidly applied, but it was always there in the background.

However, we were part of a production line in which much of our energy was spent in endeavouring to extract drafts from subject specialists within a reasonable time after the deadline had passed, while performing our role before our own deadline had arrived. One of our perpetual complaints was that we were not brought into the design of materials at an early enough stage. We were very much cogs in a wheel.

In recent times the scene has changed. We are more likely to have the subject specialist with us on secondment or at least have the subject specialist frequent our premises regularly. We are no longer involved in editing as part of the production line. We do have the ability to control the development through to master copy stage by use of the Macintosh computer linked to a laser printer.

My experiences emanate from this varied scene and what follows is an account of ways in which I have come to feel a need to modify the systems approach to instructional design in its strict form.

Behaviourism v. Mainstream Education

When the systems approach to instructional design was developed by educational psychologists in the 1960s in answer to a need to improve the capacity to train the United States armed forces in the use of new equipment, heavy reliance was placed on the behavioural work of Skinner. So, as the reasoning runs, in very general terms, if you define your performance objectives and develop your teaching program so that those objectives can be attained, all that is needed is to put the learners through the training program and then test that they have attained the desired standard.

This approach implies a number of features with which I became increasingly dissatisfied. It frequently results in content learning rather than process learning, and as I gained exposure to the work of Bruner, Kolb, Knowles and others I came to realise that by applying the systems approach to the instructional design of Distance Education materials, Distance Education itself was missing out on some of the more recently developed principles of education that were gaining favour in mainstream education. Distance Education, at least as I knew it, tended to imply that the control of the learning process remained substantially in the hands of the teacher, despite the absence of face-to-face communication. There was no discovery learning here; no place for resource based learning, problem based learning, learning contracts and so forth.

All that, I thought, would have to change. The question became, what was there that mainstream education had to offer that could be introduced into Distance Education? This was by no means a novel thought. I suspect that it occurred to lots of instructional designers at much about the same time. It resulted in Smith and Kelly (1987) writing a book about it. As far back as 1978, Dick and Carey had at least recognised the issue even if they failed to deal with it. They stated that:

> 'Though this book will stress the behavioural science approach to designing, developing and evaluating instruction, the authors are in full accord with ... [the] position that the humanist and systems approaches must be integrated in the classroom to provide the best atmosphere for effective student learning'.

Evans and Nation (1987) are more forthright. They argue that

> 'Instructional design has its roots in behaviourist psychology. At the time when these [behaviourist] theories were being debunked within educational research in U.S.A. ... instructional design was forging ahead with them'.

They go on to say that cognitive psychology has gradually impinged on instructional design, but argue that

> 'by relying heavily upon instructional design much distance education has incorporated uncritically behaviourist and cognitivist theories about learning'.

I would argue that on the Australian scene there is plenty of room left for the critical incorporation of cognitivist and other theories of education into Distance Education, and it was the continued reliance of Distance Education on behaviourist theories that left me wanting to modify the traditional systems approach to one which incorporated the cognitivist and other developments of the educational mainstream.

Instructional Designer and Subject Specialist as Joint Venturers

The systems approach to instructional design focuses on the development of instructional materials and the testing of the learner to ensure that performance objectives have been achieved. It says a little about the role of the teacher or instructor, and virtually nothing of the relationship between instructional designer and instructor. It is concerned with following the steps of the instructional design plan in linear fashion like a recipe in a cookery book, and according to Dick and Carey (1978), implies that this will be done 'by instructional designers work[ing] in interdisciplinary teams with content experts, media specialists, and instructional systems specialists ... [who] integrate their skills to produce effective products'. The instructional design plan also seems to imply the mass production and delivery of course materials and the existence of a system which supports that process, often called production and pre-production. There is a production line including authors, instructional designers, typists, printers and so forth in which each worker plays a part in the process of 'instructional industrialisation'.

In this context the role of the teacher is rendered neutral or perhaps more accurately is limited to that of the provider of content (see Kelly 1987 and 1988). All members of the team contribute their own expertise and in this way the learning program is compiled. Any querying of the expertise provided is stepping onto the territory of others. Once the stage has been reached where the content provider has provided the content, he/she withdraws from the process. The task has been completed and associated responsibilities discharged. The job is done and then he/she gets out!

The scene contemplated by the instructional design plan does not seem to match the scene implicit in the Australian 'integrated model', where almost all the courses that are offered in the external mode are also offered on-campus, and the subject specialist for the off-campus materials development is invariably in charge of the course both in its internal and external modes. Here the subject specialist is much more than the content provider, remaining very much on the scene after the materials development is complete, since the subject specialist has a continuing responsibility for the running of the course, will probably have significant contact with students, and generally will take the credit for the successes of the course and suffer the burdens of its failures.

These factors are likely to change radically the role of the subject specialist in the instructional design team. The subject specialist is far from isolated and neutral, and will develop a sense of personal ownership of the course and its materials. The subject specialist will be vitally concerned with the ultimate success of the learning program, and for this reason should have a close relationship with the instructional designer. The subject specialist will want to make a contribution to various aspects of course development beyond the provision of content, particularly to aspects of the learning process. On the other hand, the instructional designer also has the potential for being far from isolated and neutral. At RMIT the extent to which an instructional designer intervened in content depended very much on the rapport developed between designer and subject specialist. I came to see that frequently such intervention could be put not on the basis of content but on the basis of checking for clarity. For the most part RMIT's academics were very open to my queries and suggestions. In most cases, such as in law subjects or subjects that included law, subject specialists were grateful for specific content suggestions that came from my own expertise in the area. The suggestions were always made in a non-threatening way and without the subject specialist feeling obliged to make any change. Relevance and accuracy of the content were always regarded as the preserve of the subject specialist. In any event I was frequently in error, but there were occasions when my suggestions were well-founded and resulted in the subject specialist having an improved product. However, our group of instructional designers generally regarded assessment as the province of the subject specialist, and here we only intervened if invited, or if there was a clear failure to test the objectives or unless some ambiguity was apparent.

As a consequence, I came to see that the role of the instructional designer and the subject specialist and the relationship between them are more dynamic and more critical in the integrated model than in the systems approach to instructional design. Much has been written on the relationship between instructional designer and subject specialist (e.g. see Kelly 1987) and it has been proposed that the relationship is variously that of consultant, counsellor, process expert or staff developer.
Underlying the systems approach are notions that a distinction is to be made between content and process, and that the subject specialist is the content expert and the instructional designer the process expert. A consequence of this view is that the instructional designer assumes a position of control of the educational aspects of the program, and the subject specialist is cast in the mould of being a bad teacher. This view led Nunan (1983) to write about 'countering instructional design'.

Rather than stating what I believe the nature of the relationship should be, it is easier to start by saying what I believe it should not be. In my opinion the relationship of designer to subject specialist is not one of:

- outside consultant
- process expert
- paternalist, for whom the subject specialist is the object of spoonfeeding
- colonialist, for whom the subject specialist is a person to be encouraged but never given independence
- proselytiser, who preaches his or her wares to the subject specialist
- instructor, who regards the subject specialist as a pupil
- remedier of the subject specialist's defects
- prescriber of teaching methods for particular subject areas
- client-centred counsellor.

With the exception of the first and last of these descriptions, each description of the relationship subjugates the subject specialist to the instructional designer. The outside consultant leaves the subject specialist in control, whilst the counsellor relationship places the instructional designer in a passive role. Another role or mode of operation that I have seen instructional designers undertake is that of engaging in conceptual battles. These inevitably lead to polarisation and regardless of who is right or wrong, the end result is counterproductive.

From my experience, the relationship between subject specialist and instructional designer needs to be that of colleagues and I prefer the description of joint venturers. Such a concept embraces the notion that both are working together and that the ultimate beneficiary of their endeavours will always be the learner. Both will make contributions to the end product and each will learn from the other. Content will not be the sole province of the subject specialist and educational process will not be the sole province of the instructional designer. Each will aid the other in their common desire to develop a learning program that is as effective as they can devise. And together they will, or at least should, share the responsibility for the ultimate outcome.

In Australia the concept of joint venturers, which in this context implies an equal partnership, is difficult to find. There are inequalities in one direction or the other. Either the instructional designer is limited to an editorial function (powerful though that may be) and to monitoring the developmentmental process, *or* the instructional designer has an influence on planning, staffing and funding decisions which goes beyond the design of instruction. If the course fails to work well it is generally the subject specialist who bears the burden of criticism.

Joint venture requires both subject specialist and designer to be facilitators. In the case of the designer, that in turn involves the following kinds of roles:

- listening to what the subject specialist has to say
- providing feedback to the subject specialist—e.g. 'If I were a student my response would be ...'
- seeking clarification
- encouraging new ideas by asking the subject specialist 'Have you considered ...?'
- asking the subject specialist 'What are your desired outcomes?', and checking that the subject material contributes directly to the declared outcomes.
- drawing out traditional teaching wisdom from specific disciplines and respecting it.

In the case of the subject specialist it might involve the following kinds of questions:

- 'How do you think it would work if we changed the learning process to ...?'
- 'I'm having difficulty explaining this. Can you suggest an alternative way?'
- 'Does the sequencing seem satisfactory to you, or should the order be changed to ...?'
- 'Would this section lend itself to resource based learning?'

By undertaking such a process both will learn more about what the other has in mind and be enabled to get to wherever they each want to go! Essentially this could also be described as a symbiotic relationship, one in which instructional designer and subject specialist rely upon and support each other in a co-operative style in which both actively participate. They support each other's professional growth in the joint venture of working out what they plan to be best for the student. The paramount concern in any debate must always be what is best for the student, not who wins the debate.

For my part I want to acknowledge that I have learned a great deal about instructional design from subject specialists; I am indebted to their insights about teaching and have adopted many of their ideas on Distance Education materials. In so doing I am reflecting my belief that in the integrated model the roles of the instructional designer and the subject specialist are or at least can be elevated beyond the provision of process expertise on the one hand and content expertise on the other. The recognition of such roles represents a significant departure from the neutral or isolationist role of content provider espoused by the instructional design model.

Instructional Designer as Surrogate Student

Whilst at Leo Cussen Institute I began to appreciate that one of the most important ingredients in writing study materials was to view those materials through the eyes of the student and to demand of one's self 'How will what I have written be understood by the student?'. That may seem trite, but it is that simple idea that has significantly influenced the way I write and as a consequence the way I work with subject specialists. No longer am I merely writing for students; I am accepting responsibility for ensuring that what I want to be communicated is being communicated.

Standing alongside the concept of taking the student's viewpoint is the notion that what is being written is not being written for one's peers but for the student. That is an aspect of instructional design that not infrequently needs to be discussed with subject specialists, who, when writing study materials, seek at the same time to impress their colleagues!

When preparing my own teaching materials I find it helpful continually to ask the question: 'If I were a student, how would I feel about ...?' That question then gets elaborated into a form of checklist to which additions could readily be made.

As a student:

- Do I understand or am I confused? Is there an ambiguity? Is there a clear learning path? Where have I come from? Where might I be going to?
- Am I being transformed from naive learner to expert?
- Would an example help me to understand?
- Would an exercise help me to learn by doing?
- Do I consider that the writer is writing for me personally, or is the writer being impersonal and needlessly 'academic'?
- Am I put off the whole subject by the difficulty of the first item of assessment?
- Am I put off by the style of writing, by the use of uncommon words or unduly long sentences? Can what is being said be said more simply?
- Am I getting cues as to what the really important parts are?
- Is the structure apparent; has it been signposted?

When working as an instructional designer with a subject specialist it is the instructional designer who becomes the 'student' and reads the materials from the point of view of an intelligent lay person. The questions remain the same, and so by acting in this way the instructional designer becomes a sounding board for the subject specialist, and the materials that are produced will stand a greater chance of maximising student learning. Authors get feedback on how they are communicating. If I understand what the subject specialist is saying, or at least believe that I would understand it if I had similar entry skills to those of the students, then there is a better than even chance that by getting the subject specialist to explain to me the intended message to the student, we will jointly produce an improved version of the material.

When I came to that fateful job interview of which I have spoken, Jerry Grimwade asked me a question which sought comment on how I went about preparing study materials. I replied that I 'stood in the shoes of the student and reflected on how the student might respond to my materials'. This answer drew a concordant response. 'Ah!', said Jerry, 'surrogate student!'. This was an expression which, as I was to discover later, he used frequently and was clearly of significance to him. It was part of the philosophy of RMIT instructional designers.

Despite the common use of this term at RMIT, it is not a term nor a concept that is extensively encountered in the literature, and I am left with the decided impression that the systems approach to instructional design is more concerned with the application of the system than it is with the way in which writers of Distance Education or other study materials might approach their task. The systems approach to instructional design needs to take hold of the concept of the instructional designer as surrogate student!

Instructional Designer—Designer for Teacher Tool

The systems approach model for designing instruction understandably is all about providing a method for the design of instruction. Initially I was very attracted to the methodical way in which the plan was implemented. It considered what was to be learned, the procedures and materials that might work best to aid the learner to reach the desired standard, and included means by which it could be ascertained whether the required learning had taken place. Accordingly, I applied these procedures as far as was practical. However, as time went on, I began to sense that something was not quite right. I had gone through the stage of learning the RMIT instructional design and editing ropes, and that which started as novel was becoming mechanical. In time and after many experiences, I came to realise a number of things.

The first was that the systems approach to instructional design was based on the teaching of large numbers of students; but our numbers per subject were small. In all cases the number of off-campus students being catered for was under 100, and it was frequenly under 50. Furthermore, the systems approach to instructional design did not intend that the subject specialist would commonly also be the person responsible for the instruction. In our case, this was so both for on-campus and off-campus students. I was thus dealing with an extended class-room situation, not a factory model with centrally produced packages for large numbers of students (see Kelly 1987).

Secondly, I became exposed to cognitive theory, including the notion that adult learners learn in different ways; they have different cognitive styles. As a consequence it became apparent that students may best be helped if taught in a compatible style. So it becomes arguable that a variety of possible learning paths should be offered. Such a position was not consistent with the heavy structuring of Distance Education materials along exclusively behaviourist lines.

Thirdly, in applying the instructional design plan, I was focusing entirely on the learning of the student and consequently persuading the subject specialists to prepare teaching materials that might be incongruous with their own teaching style. Furthermore, I might well be constructing them in accordance with my own teaching style. Thus, I was running the risk of developing course materials for which subject specialists needed to take responsibility, but with which they might well be uncomfortable because the course materials were not in their own teaching style.

The end result of these realisations was a conclusion that the instructional design plan needed to accommodate a variety of teaching styles to suit the learning styles of students and also needed to be designed for the teacher, taking into consideration the teacher's teaching style and uniqueness as a person.

Achieving a match between the style of learning of the student and the teaching method of the subject specialist may be difficult, though Potter (1985) gives some guidelines. It should be possible to discover something of the teaching style of the subject specialist by asking some simple questions such as: 'What aspects of teaching do you find most rewarding?', 'What aspects of teaching don't you like?', 'Does your teaching program comprise lectures only?' and 'Do you enjoy working with small groups?'. Ascertaining something about how the subject specialist learns may also be revealing since teaching is likely to take place in the same manner as learning. Such information may help the designer to construct materials that, in the main, conform to a style with which the subject specialist is comfortable. It may also, with respect to those parts that are deliberately not in the subject specialist's teaching style, aid the subject specialist in experimenting with those parts so as to achieve a broadening of style without being overthreatened. That is a matter that subject specialist and designer can talk about and anticipate.

These ideas emerged gradually, but it was not until I had a conversation with Geoff Potter, Associate Professor, Faculty of Education, University of Victoria, British Columbia in Canada, that they became sharply defined. He took a humanist view of design in contrast to the traditional behaviourist one. A subject specialist is a human and needs to be accepted as such. The subject specialist should not be viewed merely as a repository of knowledge or the object of Gagnérian analysis. A flexible approach to a design project is to be cultivated, so that if a subject specialist is being traumatised by an imposed need to develop educational objectives and sub-objectives, then relief can be found. My notes of that conversation include the following:

'The instructional designer should:
- relate to the academic as a unique person;
- understand subject specialists' strengths and weaknesses—extend their strengths and support their weaknesses;
- design a course which the academic can teach, albeit in the external mode (i.e. consider how best can the student learn and also whether the subject specialist will be comfortable in the course that is conjointly designed);
- assist the subject specialist to acquire a sense of ownership of the instructional design (i.e. the work is a team effort in which decisions are jointly made and ideas are jointly explored, not imposed by one upon the other).'

That seems to be more than a useful mode of operation. Some ways of going about the task are considered in Potter (1985). What is apparent is that the need to design with and for the subject specialist, whilst not forgetting the student, is a missing dimension in the systems approach to instructional design.

Instructional Designer as Innovator

In Australia, instructional designers in post-secondary education have been primarily engaged in the design of Distance Education courses. They are the inheritors of a tradition of innovation established by the developers of correspondence courses. With face-to-face teaching unavailable, there was a need to be innovative so as to deliver an acceptable product to a special clientele. The use of pedal wireless for education is an early example of innovation. For instructional designers in Distance Education, innovation and adaptation to change should be standard working tools.

As Smith (1987) has pointed out, Distance Educators, who might now be alternatively described as instructional designers in Distance Education, 'have been more ready than traditional teachers in post-secondary education to experiment with such things as the Keller Plan, PSI, video cassette, telephone tuition, home computers and with satellites.' Though they have not necessarily pioneered new teaching methods, Distance Educators have been innovative and innovation has been part of their evolution. Furthermore, Distance Educators generally use a much broader range of media than face-to-face teachers. There is every reason to believe that that tradition will be continued by instructional designers in Distance Education, and, with the gradual blurring of the distinction between distance and mainstream education, it can confidently be expected that mainstream education will itself undergo change and benefit from innovations initiated by instructional designers.

Although there is a clear relationship between instructional designers in Distance Education and innovation, I have no reason to suggest that innovation is restricted to instructional designers in Distance Education. Indeed I would expect the reverse to be the case. Instructional designers, as a species, and whatever their field of operation, are always endeavouring to find ways of improving the learning of their students, and innovation is a natural outcome of that process.

The innovative trait of the instructional designer is not always of major significance. There are many small advances. In our own group I have witnessed such things as experimentation in the use of audiotapes, the development of resource based learning packages, the development of study skills programs, trials of tutored video instruction and the use of Interpersonal Process Recall. All have been part of endeavours to improve the student's learning. The establishment of a satellite system for tertiary education institutions is a rather larger project currently in hand. I am presently just at the beginning of considering the potential of the software program HyperCard and ways in which the increased power of personal computers might be used to take computer aided learning beyond the world of drill and practice and knowledge acquisition. Hopefully these projects will ultimately result in some worthwhile innovation.

Thus, the roles of innovator and inheritor of a tradition of innovation are significant elements in the *persona* of the instructional designer. Yet the systems approach to instructional design is so preoccupied with the application of the system that it fails to address the task of innovation. It would benefit by so doing.

On Being Flexible!

A current instructional design project in which I am involved is the design of a computer manual. A mathematician at RMIT is nearing the end of developing a novel computer assisted learning and testing system which enables teachers to readily create their own lessons.

A manual is wanted which will aid teachers in preparing those lessons. A colleague is assisting in this process, so it became necessary to devise a method by which the three of us could work together. We have decided that the author of the program will identify entry behaviours and conduct an instructional analysis, whilst his colleague will proceed with the writing of the manual, with little respect for the instructional design plan other than to construct it by reference to the criterion 'How the teacher can create a lesson, and what that person needs to know in order to do so'. In identifying entry behaviours and conducting the instructional analysis the author of the program will be looking at the entry skills of lesson authors and will then elaborate on the skills required by them in order to create their lessons. I will assist them in their tasks as necessary. What we will do is progressively exchange information and identify any skills needed by lesson authors that are missing from the draft manual. Already the process has had its impact on the design of the manual, though it is still too early to say whether the procedure can be regarded as successful.

What is happening is that the instructional design plan is being utilised, but in a modified way. A document is deliberately being created without the advantage of the instructional design process, but it is progressively being subjected to the rigours of that discipline. This has seemed to us to be a practical way of best utilising the personnel available, even though the instructional design plan is not being strictly followed.

I suspect that it is useful for instructional designers to be on the lookout for variations to the implementation of the instructional design plan, and in so doing adapt the model to suit rather than be caught in its straightjacket!

Weaving!

Over the years I have come to realise that the instructional design model, although a helpful guide, can become a fetter if applied strictly. Real life does not proceed in a rational, linear way as suggested by the instructional design model. The instructional design model has to be applied by people who are unique, who have different styles, who have feelings, are not always rational and who will interact with each other in a variety of ways. The process of design is fundamentally a human one and not the mechanical application of a model, useful guide though it may be.

So, in proposing that the instructional designer might assume the role of joint venturer with the subject specialist, as well as surrogate student and innovator, while ensuring that design substantially matches the teaching style of the subject specialist, I am suggesting modifications to the application of the instructional design model that have the effect of humanising it. These diverse approaches have worked for me and are the product of unique experiences encountered whilst weaving my own design!

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CHAPTER 2

The Critical Role of the Educational Developer

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My own approach owes something to the attitude and procedure of Dashiell Hammett's detective, 'The Continental Op':

> The Op is called in or sent out on a case. Something has been stolen, someone has been murdered - it doesn't matter. The Op interviews the person or persons most immediately accessible. They may be innocent or guilty - it doesn't matter; it is an indifferent circumstance. Guilty or innocent, they provide the Op with an account of what they really know, of what they assert really happened. The Op begins to investigate; he compares these accounts with others he gathers; he snoops about; he does research; he shadows people, arranges confrontations between those who want to avoid one another and so on. What he soon discovers is that the 'reality' that anyone involved will swear to is in fact a construction, a fabrication, a fiction, a faked and alternative reality - and that it has been gotten together before he ever arrived on the scene. And the Op's work therefore is to deconstruct, decompose, deplot and defictionalise that 'reality' and to construct or reconstruct out of it a true 'fiction', i.e. an account of what 'really happened'. (Hammett,1975).

What does it mean to be an educational developer? Of what benefit is it to have an educational developer on the course team? Do educational developers have a unique set of knowledge and skills which they can contribute to the course development process?

The easiest and yet most honest answer is "It all depends," because meaning is derived from and developed only in context. Does the content expert seek out an educational developer? Is the developer assigned by a third party? Does the presence of the educational developer mean that the team is viewed as having had difficulties or is about to have? Is the role of the developer to steer the ship into calmer waters? Does the developer join the team at the beginning of the development cycle or is the developer brought in after the content has been written (the transformer role)? Does the team function as a hierarchy or as a colleagual group? Is a majority or a consensus model of decision-making used?

Context Issues

All of these context issues are important because the meanings given to the group and the way interaction is structured can both enlarge and restrain the alternatives open to the educational developer and make his or her involvement more or less problematic. Because educational developers provide a link with the other aspects of the development process and with the lived worlds of the learners they should always be conscious of the meanings others give to their work and the meanings they provide through their actions and non-actions. Since their raison d'etre is the facilitation of learning, they must also be aware of the impact of other parts of the development and delivery process on the learner and on the instructional process and act to ensure that the concerns of learners are not ignored in preference to efficiency, stability or other educational or institutional "goals".

Perhaps the most important contribution of the educational developer is at the beginning of the course development process. During the dialogue with the content writer the developer must ensure that all the pedagogical issues are raised and addressed and that agreement is reached.

Role of the Education Developer

The educational developer is generally viewed as bringing to the development process, skills and expertise in the design of instruction, and in choice and use of media. Yet by far the developer's most important contribution is as an adult educator, and the most critical time for the development process is in the first meetings of the content writer, the educational developer and the project director. Where there are several content experts, the developer's contribution is even more crucial in establishing the common ground, and seeking agreed meanings which become the foundation for action.

Most often, during these first team meetings, role descriptions are stated such as, "You will be responsible for the content of the course, and the educational developer will help you with its instructional design." For the project director and the educational developer this is familiar territory and terms are thrown into the conversation as if all present already knew and agreed to their meaning. Administrative parameters are outlined; the time-line, the general calendar description of the course, and deadlines. The content expert may seek technical answers, to how and when media choices will be made, who will type the materials, possible forms of evaluation, how to access library assistance in a search for possible materials. They leave the meeting and go to work —and sometimes it does work without a hitch, but seldom so.

What is missing from this situation? Let's imagine their responses to the question "How did it go?" The project director is likely to think that everything was clearly laid out, questions were answered and the writer went off to write. The educational developer may agree with the director but is likely to want to withhold judgment until the first pages of the manuscript are in and the quality of the writing style and clarity of the logic of the writer are evident, -- as well as the ability to keep to deadlines. The writer on the other hand, may well feel both excited — after all these people know what they are doing and it should be interesting — and apprehensive. Even the provision of a blueprint, such as a computer program does not avoid possible conflicts. The writer puts these feelings aside and starts writing. Without further clarification, the materials submitted to the team may be far from the expectations of the educational developer and the first of possibly many potential conflicts surfaces.

On-Campus Teaching and Off-Campus Writing

In many instances the content expert writer is a continuing faculty member seconded or persuaded to write a Distance Education course. His or her first orientation is to the classroom and possibly the student and there may well be some knowledge of the Distance Education enterprise. Writing down the content of lectures is foreign ground but without other guidance it becomes the most common starting place. Once the writer has put substantial effort into structuring the course and deciding on topics and evaluation procedures, it is no wonder that he or she is not likely to take seriously an educational developer questioning the order of the topics or even the topics themselves. After all, if it works in class why will it not work for people who read instead of listen? The educational developer is allowed instead to suggest minor changes to the copy; the inclusion of more questions here, a clarifying paragraph there, and becomes essentially an editor for the print copy. Questions about the educational relevance of the activities, or the appropriateness of the materials are put on the back burner as the deadline nears and the developer is forced to accept what the writer writes and the assumptions under which it is written. Meanwhile the content expert feels that his or her work has been devalued and that the promised assistance in designing new and innovative materials has not been forthcoming.

How might his situation have been avoided? I think that the educational developer did not ensure the development of an agreed-on foundation of meanings so necessary for real team work. Instead of using those first sessions as information sessions for the writer, time should have been spent on discussing and sharing the assumptions and biases of the team members in a number of areas. The developer has an obligation to ensure that the content writer has had an opportunity to voice his or her attitudes so that the underlying educational platform of the course is known and the developer can proceed to provide assistance where it will be most appropriate.

Often content writers are not fully aware of either their espoused educational philosophy or theory-in-use in the classroom. It is the major task of the educational developer to bring these points into focus so that the content writer can be assured that the stance taken towards instruction, for example, is agreed to by the developer and that any major disparities have been discussed beforehand. Let's examine the major topics in turn.

Distance education How much do content writers know about this topic? What pictures do they have in their minds about how Distance Education operates? Do they view it as a second-class offering for those unfortunates unable to come on campus? Have they had experience of or even considered other media besides print? Are they technology shy? Will this project provide them with the opportunity to do research in Distance Education? What common meanings about the process have they learned from other content writers?

Knowledge What views of knowledge are held by the team members? Is knowledge viewed as a discrete body of facts and principles independent of the learner or is knowledge an individual set of meanings and an integral part of the knower? Is knowledge a hierarchy or a network?

Specific content of the course How does the academic view the course content? Is it essential required learning? Is it "truth" and not to be challenged or is the content seen as an opening for discussion and learning and an opportunity for the learner to consider other ways of networking concepts besides those developed through experience? Is the content linear and sequential or is it modular with core and optional units? Is the content to be contained in the text or course notes or will outside reading and experiential learning be encouraged?

Adult Students How familiar is the writer with the lived worlds of the learners? Does the writer have a visual picture of the daily life of learners and the place of and reasons for taking the course? How aware is the writer of the major tenets of adult learning theory? How important is experience in the content structure of the writer?

Teaching/Learning Do writers view teaching as the transmission of content? Is their analogy essentially mechanical? Or is teaching the facilitation of learning? What relationship do they see between teaching and learning? What is their usual classroom teaching style? What are their preferred instructional strategies? How do they see these fitting within the Distance Education model? How do they plan to handle the loss of classroom dialogue? Do they consider Distance Education to be based on the traditional (but invisible) classroom paradigm or are learners now in charge? How will they set up the necessary preconditions for learning?

Evaluation What expectations do they hold for the successful completion of the course? How much of this is based on facts and how much on application? How many assignments and of what kinds do they consider essential? What is the relationship between the end and the beginning of the course? Is it linear, or a ladder or circular or is there no linkage?

Conclusion

These questions are only some of the many which could be asked in discussions with the content writer. The task of the educational developer is firstly to ensure that the writer's philosophy is integrated and then that it is educational. By that I mean that its goal is essentially pedagogic and finally that such a philosophy can fit within the specific organizational goals of the Distance Education system. The values held by the content writer about the content, its structure and its evaluation are often clarified in such discussions but in general they are the givens the educational developer has to work within. By assisting the content writer in clarifying his or her philosophy about teaching, in broadening the teaching repertoire, in enlarging the understanding about adult learners, and in discussing Distance Education alternatives, the educational developer provides a blend of skills and knowledge which, used in context, can enhance the learning opportunities for students at a distance. The skills and knowledge are not unique, but the true skill is in knowing which to use where. It is the reconstruction of 'reality' - a true fiction.

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CHAPTER 3

The Role of Developers and Designers in Distance Education

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Introduction

Contrary to academic convention, I will attempt to illustrate my personal perceptions of the problems associated with development and design in Distance Education. Such perceptions have developed from my experiences as: a student in a very conventional university; a school teacher; a Distance Education student with The Open University; a lecturer in curriculum theory and practice; a postgraduate student of instructional design and the implementation of educational innovation; an educational development officer; a Distance Education consultant; an executive member of the Australian and South Pacific External Studies Association (ASPESA) and current editor of ASPESA 'News' and Occasional Papers; Associate Head of the Division of External Studies in one of Australia's largest providers of Distance Education and now as Head of the Distance Education Resource Centre of another of Australia's principal providers.

This background provides me with a reasonably informed perception of the reality of Distance Education. However, in an area involving social interaction, reality is highly negotiable, so, bearing that in mind, I will unashamedly attempt to impose upon you my views of the role of instructional designers and developers .

The Instructional Design, Educational Development Dichotomy

There are fundamental differences between development and design on the one hand, and education and instruction on the other. In combination, the gulf is even wider, with instructional design having little in common with educational development in terms of both means and ends.

Dave Meacham

The term 'design' has implications of a prefabricated mental plan and an established form of product. In contrast, 'development' refers to the gradual unfolding and fuller working out of a pre-existing scheme of things.

Given the complexity of variables relating to everything from student attitudes and staff competencies to institutional norms, it can, and will, be argued that the concept of design, despite its appeal to rationality, is, in fact, almost wholly irrational when considered in context.

Similarly, when divorced from its military and industrial origins, and applied in an educational situation, instruction, in the sense of making known to persons what they are required to do, has similar limitations to those of design. Education, being the giver of intellectual or moral training, frequently has essentially amorphous outcomes, which, although capable of being judged by pre-existing criteria, cannot be pre-ordained.

In the context of higher education, I cannot subscribe to the views of writers such as Luebbert (1973), who describes instructional design as a kind of fire-support centre for the 'academic artillery'. My academic colleagues would soon spike my guns, if any such hardnosed, mechanistic approach was suggested.

Instructional Design: Ideology Masquerading as Rationality

Having been engaged for many years in the task of improving education, both at a distance and in more conventional modes, I have become convinced that a great deal of instructional design is both theoretically unsound and practically inadequate. Let us first consider some theoretical issues.

Instructional design is not a discrete form of knowledge, with distinctive concepts, networks, methodologies and criteria for truth. It is simply a collection of knowledge from various disciplines, which has been gathered together for a common purpose. As such, it is the consequence of opportunistic eclecticism, having no inherent logical structure to give it unity. The same may be argued of many areas of human endeavour, from management to engineering, so eclecticism per se is not to be condemned. However, the real problem is that the field embraces some theories which are antithetical, such as behaviourism and humanism, but omits others, such as those concerning innovation theory and the philosophy of knowledge, which are essential for any workable prescription for action.

To prescribe changes, based on unproven assumptions, and without a clear idea of how to bring about these changes in the individual involved, seems to me to be a recipe for disaster.

Instructional design is essentially a normative theory of practice, not primarily concerned with understanding per se. It is prescriptive rather than descriptive, staking its claims for recognition on producing the right recipes. Unfortunately, it has not achieved this in my experience, nor, apparently, in that of others.

If we examine media selection, one of the cornerstones of the expertise of the instructional designer, what do we find?

Hawkridge (1973), no stranger to the field of instructional design, points out that over 2000 studies in the USA have failed to produce an adequate media selection scheme. Most schemes of rational media selection are illusory in practice; contextual failures, specific and suspect, or generalised and self-evident. I have yet to encounter a scheme which is flexible and of use at the operational level.

In the area of television instruction, Saettler (1968) brought to light 250 comparisons of television and direct instruction. Of these 217 were uninterpretable; 23 partially interpretable; and ten were capable of interpretation. None of the ten interpretable investigations showed a significant difference in instructional effectiveness.

In view of such findings and the limited use made by students of the ample provision of media-based learning at The Open University of the United Kingdom, I am most reluctant to prescribe a particular medium for a range of teaching activities. Yet on many occasions I am asked vaguely disapproving questions concerning an over-reliance on print.

The choice of media, like any other instructional design decision, can only be effective when all relevant variables from subject matter, to acceptance by academics, are taken into account.

When instructional designers choose to dismiss both complexity and academic tradition with the following types of comment (Fraley and Vargas 1975), it is little wonder they have difficulty in achieving their goals.

> "There is an unfortunate trend in higher education, through a mix of ignorance and design, to avoid the objectivity of the newer behavioural and instructional technologies by obscuring the nature of the instructional process in a shroud of mystic elusiveness. Academicians propagate many ideas of that type: the goal of instruction is to impart truth and wisdom; instruction is a meeting of the minds . . . By defining instruction in terms which defy translation to objective operational processes, the academic content expert can mitigate the organisation of criteria by which he might become excluded from his position of control."

To combat 'mystic elusiveness', instructional designers appeal to rationality, or at least, to their limited version of the concept. Any philosophical consideration of the nature of rationality is conveniently ignored. Although my academic encounters with philosophy and sociology have been of enormous value in working with academic authors and teachers, they become a positive liability in any dialogue with instructional designers. For example, even a brief consideration of a critique of rational thought, such as that presented by Oakeshott (1962), generates for me the following uncomfortable thoughts:

> Although the ends → means → action model appears to have some internal logic, is clear and simple, and looks appealingly like conventional scientific methodology, it ignores precedent, norms, and even people.
>
> Conduct is only rational in terms of context; it cannot be predetermined and directed solely by rules, which relate to the product of human endeavour rather than the complex social interactions comprising the process.

> Knowledge of specific subjects, people and organisations is a necessary ingredient for any plan of action in developing Distance Education materials.

Instructional designers' attempts to rationalise the academic tradition by using a poorly researched, philosophically unsound, theoretical base are doomed to failure. In my experience, no context, no politics, no organisation, no ambition add up to no sense.

Educational Development: A Negotiated Reality

The key to success in this area lies, not in a grand design born out of ideology and self-interest, but in a personal, low-key, small scale approach, which is situation-specific and adaptive to context. Of all the qualities required of neophyte educational developers, I would place negotiating ability at the top, followed by knowledge of subject area and then knowledge of instructional design. This is partly because I find the last the easiest to teach to new recruits, but also because, if you can't speak the language of the clients, communication is somewhat difficult. Note that the client-consultant relationship is preferred to that of consumer-producer, which only serves to further alienate academics contributing to Distance Education.

Theory should not direct practice; there should be an interactive relationship. The denigration of intuitive knowledge by the practitioners of instructional design, who wish to elevate operational knowledge in order to exercise sound control, is quite unproductive. In order to work effectively with academics, the development of what Nunan (1983) terms a 'dialectic relationship' is essential. In order to expedite this, some institutions have developed a decentralised system of educational development, with the development officers located in and partaking in the intellectual and social milieux of their respective schools. Such a move was necessary in order to work with the value systems of the clients. Academics overwhelmingly see teaching as only being capable of interpretation through their values, not those of managers, bureaucrats or technologists.

If instructional design is seen as an element of centralised control, academics are likely to reject its language, concepts and structures, so a considerable degree of negotiation is required to initiate any change. Any attempt to prescribe rules for producing materials and student behaviours, which in turn, are interpreted as learning, is ineffective, and in my experience, a route to disaster in terms of institutional politics. Although technocratic lecturers may support a systems approach to instructional design, more traditional academics perceive it as a threat to highly valued aspects of teaching, such as spontaneity, autonomy and individualisation. This reaction cannot be countered by metaphors of rationality and science, accompanied by claims of superiority. The academic tradition forms part of the context of negotiation and needs to be fully utilised in an environment of compromise rather than conflict.

Tradition and the Nature of Knowledge: A Black Box for the Designer

To explore the nature of the above mentioned process of negotiation, it is necessary to examine the academic tradition and the nature of knowledge in a little more detail. In the first instance, learning to teach, especially in higher education, is a peer-dominated socialisation process. Many lecturers have no formal pedagogical qualifications; they do, however, know a great deal about their disciplines, autonomy and institutional reward systems. Traditional views of teaching include beliefs that it is largely intuitive, and, at higher levels, not highly valued in comparison with research and administration. Such beliefs cannot be dismissed with contempt, or even quietly ignored, as they are fundamental to those individuals whose support is necessary for any meaningful change to take place; hence the emphasis on negotiation as the key to desirable change in this area.

Academic tradition should not be regarded as an inflexible barrier to innovation; being a product of human consciousness, it is capable of extreme flexibility in response to changing circumstances. Just as scientific knowledge fosters innovation within a well-established set of rules and beliefs, academic tradition is capable of a similar response. However, experience shows that such a response is more likely to be forthcoming if individual academics see themselves as working with contextually sensitive educational developers, rather than for instructional designers sensitive educational developers, rather than for instructional designers who attempt to legitimise their control of the situation by an appeal to theory divorced from practice. In some ways, both instructional design and the academic tradition may be regarded as ideologies: systems of values and beliefs propagating the self-interest of a particular class or group. If this is an acceptable view, then all instructional designers would do well to heed the advice given by phenomenological sociologists: He/She who has the biggest stick has the legitimate definition of reality.

Polanyi (1958) gives insights into a frequently ignored area of potential conflict between academics and designers: the relationships between theory and practice, doing and thinking. A great deal of knowledge about teaching is derived from the act of teaching, not from experiments, theories, hypotheses and concepts. This tacit, intuitive knowledge of teachers is frequently denigrated by instructional designers intent on management and control of the teaching process. In distance teaching, as in other modes, knowing how to do something cannot be equated with doing it. Rules alone cannot dictate actions; theory must have a dialectical relationship with practice. To believe that an instructional designer can prescribe a distance teaching methodology to an academic, in an unfamiliar discipline, say quantum mechanics, is rather like believing that a non-golfer, non-cricketer, non-cyclist, or non-swimmer could successfully coach any of those activities. If tacit knowledge, derived from action rather than theory, is part of the context of distance teaching, then what is needed is an educational developer who can tap this knowledge, link it with other contextual knowledge concerning the organisation, students, schedules and so on, and achieve the best possible outcome, given the complex variables and inadequacy of information inherent in the situation.

One of these variables is, of course, the actual knowledge it is intended the Distance Education student should learn. Many instructional designers see their prescriptions as being content-free; this I would consider to be a grave mistake. Reference to Hirst and Peters (1970) and Hirst (1965) illustrates this particular problem. Such philosophers identify discrete, irreducible conceptual areas such as: logic and mathematics; the physical sciences, concepts essential to personal experience and knowledge, moral judgement and awareness; aesthetics; religion; philosophy. The precise nature and nomenclature of such divisions have been debated and modified. However, the observation that there are discrete forms of knowledge, each with distinctive concepts, networks of concepts, methodologies and criteria for truth, remains valid, in the eyes of both philosophers and many traditional academics. Regarding less of the philosophical validity of such views, what is believed to be real is real in its consequences, so it is essential that the educational developer works within the framework of beliefs existing for each subject discipline. To attempt to prescribe a methodology of distance teaching without any reference to content could result in objectives relating to the morality of number, or the beauty of gravity. Without an understanding of the place of axiomatic logic in mathematics, and empiricism in science, the contribution of the free-floating, content-free instructional designer would be extremely limited. The ideal educational developer working in the area of mathematics or science would be able to understand the discipline through having done it, as well as understanding instructional design through both theory and practice. Content-free instructional designers live in a reality shared only by themselves, thus creating major difficulties in operating in a conceptual and organisational context which does not recognise their special gifts.

So far the problems of the instructional designer, in relation to the nature of theory, knowledge and institutional realities, have been considered. Let us now turn to some difficulties related to teaching and learning.

Teaching and Learning: Unknown Variables

Effective instructional design must relate to what is known about teaching and learning. Such knowledge is generally derived either from intuition and practice, objective empiricism, or some form of qualitative analysis. I would take the view that the teacher's intuitive knowledge of the processes of teaching and learning should form the basis of actions undertaken to improve student learning in the distance mode. Thus, educational developers should be encouraged to identify and refine individual competencies and perceptions rather than persuade a diverse group of academics to operate within a particular prescription, based on coarse typologies and grand theories.

Why this rejection of overarching theory, neat prescriptions, clarity of purpose and organisation?

In the first instance, there are so many categories and taxonomies of learning style, objective discrimination is bordering on the impossible.

Knox (1977) identifies the following as being the learning styles most frequently mentioned in the literature:

Active	-	Passive
Assimilator	-	Accommodator
Concrete	-	Abstract
Converger	-	Diverger
Field Dependent	-	Field Independent
Focussing	-	Scanning
Holistic	-	Serialistic
Reflection	-	Impulsivity

There is considerable overlap in these categories, but there are clearly learners who want to be active rather than passive; reflect on the whole, rather than experiment with parts; work from the concrete to the abstract; be flexible not rigid. The converse is also true, so variability is the key. The *self* of the student is part of the learning process. Who is better fitted to identify the nature of students? The instructional designer or an experienced teacher?

Since the majority of students educated at a distance are adults, a wider exploration of how it is thought adults learn is relevant to my argument, which is that, since instructional designers have either no knowledge, or conflicting views of the nature of their particular Distance Education students, they cannot prescribe appropriate learning materials.

An exhaustive analysis of adult learning theory is provided by Jarvis (1983) who identifies some key beliefs in adult education. It is perceived that all new experiences are interpreted by the self, given meaning, integrated with past experience and stored in mind. Therefore, adults learn more effectively if they can organise their interpretation of new experiences into their already constructed universes of meaning.

Furthermore, as shown by Brundage and Mackeracher (1980) there is evidence that adults under stress do not learn effectively, especially if they do not feel free to express themselves without inhibition.

On the face of it, the essentially unidirectional nature of knowledge transmission in Distance Education, and the prevalence of learning materials based on behaviourism rather than individual reflection and experience, are inimical to effective learning by adults.

If such views of adult learning were universally accepted, then a major role of the instructional designer or developer would be to ascertain the range of learning styles preferred by the student population, as only on this basis could the effective design of Distance Education learning materials be achieved.

However, in practical terms, adult learning theory is about as much use as instructional design theory, as its conceptual and empirical bases are similarly suspect.

Andragogy is conceptually weak, and based on humanistic ideology, which is under attack from those who emphasise the importance of 'knowledge' rather than immediacy and relevance to the learner. There are many examples of observations which are incompatible with the common view of the adult learner as postulated by Knowles (1978). For example, Reisman (1950) challenged the view that all adults are self-directed learners. Mezirow (1981) and Freire (1972) see the socio-cultural milieu, rather than age, being the most significant factor in learning, whereas Gagne (1977) postulates an hierarchical typology of learning which is independent of the age of the learners, yet is widely used as the basis of instructional design for Distance Education.

Adult learning theory, with its focus on methodology and neglect of knowledge, culture and power, in an ideological pursuit of individualisation, is best regarded as simply another unsubstantiated normative view, which is hardly a suitable basis for the design of distance learning materials responsive to the needs and competencies of the students.

Some of the work directly relating to how Distance Education students learn also causes problems for mainstream instructional designers. To take but one example, Gibbs, Morgan and Taylor (1982), consider the phenomenological research perspective on learning as used by Ference Marton and the Goteborg Group, and, in a series of later papers, apply this approach to examine the way in which students learn at The Open University of the UK. They observe that in-text questions may 'technify' students' approaches to learning, making it superficial; uninterrupted contact with the text may be essential for effective reading; learning occurs in a context perceived by the learner; strategic choices cannot be derived from general formulations; theory should be emancipating not prescriptive; the quantity rather than the quality of learning is increased by a technological approach; students may have deep or surface levels of approach to learning; students can develop their sophistication as learners.

These views are not based on typologies of age, social class or knowledge, they are based on the perceptions of individual students with regard to attempts to help them learn effectively. Marton (1979) sums up the views of the Goteborg Group in the following manner:

> "In order to improve learning, we have to find out the different ways in which the students think about the content, on one hand, and to raise their consciousness of the way they set about the learning task, on the other."

Such views lead to one using in-text questions sparingly, for specific purposes such as directing students to key facts, ensuring adequate coverage of materials, and monitoring the use of all such learning aids by soliciting the views of both teachers and taught.

If the emphasis is on development rather than design, then another largely neglected source of information about students may be tapped - the intuitive understandings of teachers who have been successful students, and currently have the closest relations with them.
The systematic development of this intuitive knowledge should be one of the foundations of educational development for distance teaching.

If we move from models of learning to models of teaching, we find a similar morass of unsubstantiated theory and ideology, with little empirical evidence of effectiveness, particularly in relation to Distance Education.

Mathis and McGaghie (1974) take the view that no single theoretical view of teaching and learning can be regarded as authoritative. This is hardly surprising when suggested models range from Skinner's extreme behaviourism with very strict control, through Ausubel's moderate cognitivism, to Roger's strict cognitivism and freedom to learn. Add to this Gagne's model of eclectic integration and confusion reigns once more.

In the field of Distance Education, the behaviourist approach informs the use of computer assisted learning; freedom to learn relates to adult education; yet conventional Distance Education attempts to fulfil Gagne's conditions of learning.

As Baath (1979) points out, there is practically no empirical work on the application of this plethora of models, so your choice of a model of teaching ultimately depends on your view of learning and the goals in mind. Since any such choice is based on one's view of the human condition itself, prescriptions from instructional designers encounter enormous problems of acceptance.

There are simply too many variables, too many choices, too many problems, to lay down prescriptive designs, even if we ignore the final variable, the teacher.

The Teacher: A Fixed Variable?

Of all the inputs into instructional design, the nature of the teacher is probably the most neglected. This is as true for Distance Education as it is in a face-to-face situation. To ignore teacher variability is to cast aside a great deal of knowledge concerning management, staff development, and innovation.

One of the main tasks of the educational developer is to ascertain the competencies and attitudes of the clients, in this case, teachers, or lecturers involved in Distance Education. Overarching instructional design is not usually sympathetic to the needs of individual clients, but has a structural and functional basis. Havelock (1969) points out that consultancy is more likely to be effective if the client initiates the interaction; has a temporary and problem specific relationship with the consultant; obtains advice and not prescription; and if there is no administrative or authoritative relationship between the client and the consultant. So educational developers must work with teachers in a helpful, supportive, non-threatening manner. Attempts to gain control through authority and self righteousness are futile at the individual level.

Ultimately, academic staff must be considered as individuals and paradoxically, it is necessary to turn to typologies and models to demonstrate the problems involved in dealing with unique human beings. Bolam (1981) sees teachers as having careers during which they become progressively less concerned with system requirements and more concerned with individual needs. Whilst at early stages in their career paths, teachers may focus on group and individual performance, later they are more concerned with career development, professional knowledge and personal education. Given the rewards for good teaching in tertiary institutions, it is little wonder that the exhortations of instructional designers are largely ignored.

Hall (1974) identifies a model of change applicable to the problem of implementing innovations in an educational context. His work has been directly applied to Distance Education by Eastcott (1981) and Meacham (1982).

These works consider that a member of academic staff engaged in the production of learning materials for Distance Education has a whole range of problem-specific concerns focussed on how the activity will reflect on the individual involved, how the task can be effectively managed; what the learning outcomes will be; how the experience can be evaluated and shared with others.

It is believed that staff at any given stage of concern need particular kinds of support from the educational developer, with the imposition of a prescriptive instructional design model being at best unproductive, and at worst, counterproductive, increasing anxiety and encouraging attention to centre on self-interest rather than effective teaching. Imagine the effect of an Institute-wide, standardised evaluation procedure where many of the academics lack confidence in their competencies in distance teaching and are concerned largely with self-interest or, in their eyes, self-preservation.

I do not have to imagine such a case, I experienced one. The findings of the evaluation were never made public, motions concerning their destruction were passed, and the academics closed ranks to combat a perceived threat to their autonomy. Evaluation later worked well, after being introduced on a personal basis, with the form of the instruments and the dissemination of the findings being negotiated on an individual basis. After such experiences, I need no convincing of the need to tailor educational development to the individual needs and concerns of the clients. Before attempting to impose a mechanistic, instructional design view of institutional and individual reality, consider the following observations made by workers in the area of educational innovation and staff development:

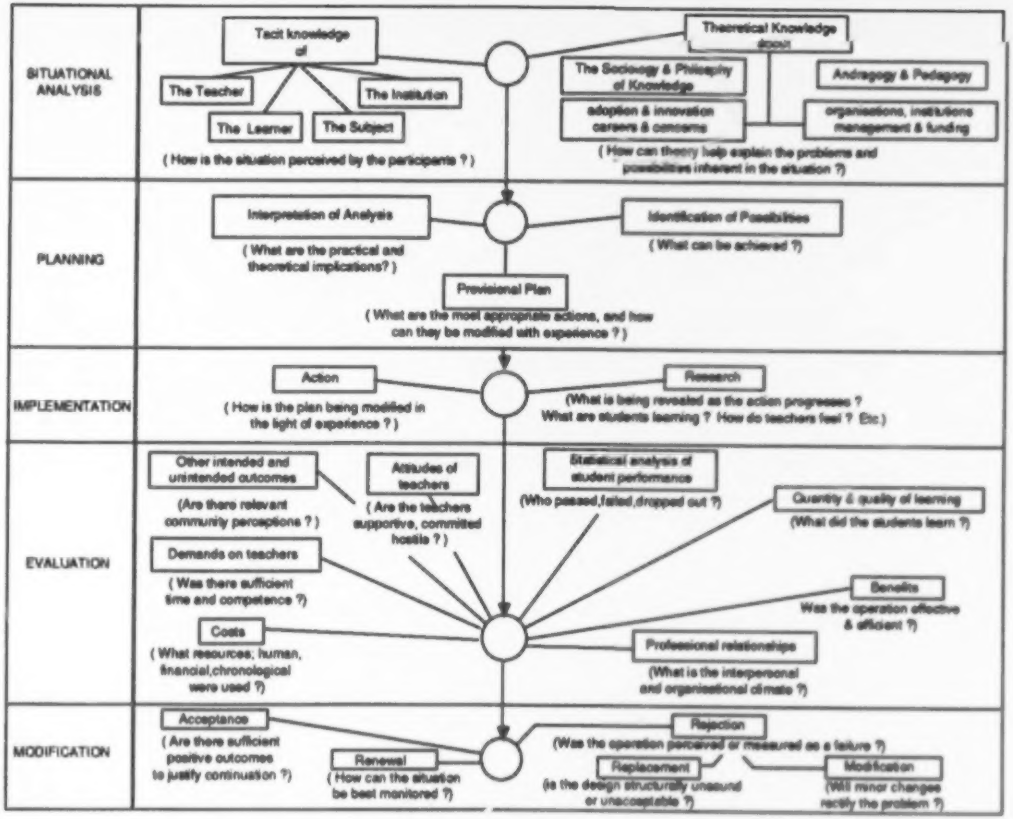
> Significant changes in teaching methodology should not be regarded as an event, but as a process taking considerable time to unfold.
>
> Responses to change by academic staff vary over time with predominantly self-oriented concerns being replaced by task and, eventually, impact orientation.
>
> Organisational changes and facilitating regulations alone are insufficient to maintain an innovation. Change in the individuals involved is a necessary condition for success.
>
> Changes in the medium and methodology of teaching constitute a personal experience involving the feelings, needs, perceptions and attitudes of participants.

- Change agents should be aware of the deskilling potential of an innovation, and accept as legitimate the self-concerns of individuals.
- To avoid extensive personal concerns, innovatory schemes in Distance Education should cater for the development of competence and confidence in new skills and knowledge.
- Actions meant to facilitate an innovation should be patterned with reference to the changing motivations of those involved.
- A developmental program should be capable of accommodating those individuals who are unable to move beyond the level of self-concern.
- As a consequence of the various degrees of concern of participants, innovations of any magnitude invariably become adapted rather than adopted.
- A consideration of individual concerns over time is likely to cast doubts on the validity of premature attempts at summative evaluation.

It may be convenient to regard instructional design as a blueprint for an event rather than a process, and believe all will see the value in it, but convenience and effectiveness are not to be equated. Any attempt to improve the design of distance learning materials must take into account the individual variability in concerns and competencies, of the teachers involved.

The Educational Developer: A Person for all Seasons

In the light of the foregoing discussion and my own experiences, I would consider that the process of instructional design, or more properly, educational development, should be one of disjointed incrementalism based on situational analysis.


SITUATIONAL ANALYSIS
Tacit knowledge of
The Teacher
The Institution
The Learner
The Subject
(How is the situation perceived by the participants ?)
Theoretical Knowledge about
The Sociology & Philosophy of Knowledge
Andragogy & Pedagogy
adoption & innovation careers & concerns
organisations, institutions management & funding
(How can theory help explain the problems and possibilities inherent in the situation ?)
PLANNING
Interpretation of Analysis
(What are the practical and theoretical implications?)
Identification of Possibilities
(What can be achieved ?)
Provisional Plan
(What are the most appropriate actions, and how can they be modified with experience ?)
IMPLEMENTATION
Action
(How is the plan being modified in the light of experience ?)
Research
(What is being revealed as the action progresses ? What are students learning ? How do teachers feel ? Etc.)
EVALUATION
Other intended and unintended outcomes
(Are there relevant community perceptions ?)
Attitudes of teachers
(Are the teachers supportive, committed hostile ?)
Statistical analysis of student performance
(Who passed,failed,dropped out ?)
Quantity & quality of learning
(What did the students learn ?)
Demands on teachers
(Was there sufficient time and competence ?)
Benefits
Was the operation effective & efficient ?)
Costs
(What resources; human, financial,chronological were used ?)
Professional relationships
(What is the interpersonal and organisational climate ?)
MODIFICATION
Acceptance
(Are there sufficient positive outcomes to justify continuation ?)
Renewal
(How can the situation be best monitored ?)
Rejection
(Was the operation perceived or measured as a failure ?)
Replacement
(is the design structurally unsound or unacceptable ?)
Modification
(Will minor changes rectify the problem ?)

Educational Development: An Emancipating Model

The model shown on the previous page, which is meant to be emancipatory rather than prescriptive, can be used as a basis for making situation-specific decisions, informed by intuitive and theoretical wisdom both gleaned from and concerning all participants.

To have a grand plan, universal recipes and blueprints all appear to me to be weak in theory and disastrous in practice; the consumer of instructional design does not have to prove the case for rejection, but the purveyor, the case for acceptance.

We work in a world of individual perception within an institutional context, where specific advice is demanded, yet authority is constantly questioned. Rather than meet these demands and questions by claiming authority through unique knowledge, educational developers should work in an interactive way with academics who can bring a great deal of intuition and experience to the problem of instructional design for Distance Education. Rather than seeing the theory/practice relationship in purely technical terms and providing algorithms for proper actions , instructional designers should - to use an Australian expression - 'take the tickets off themselves', sit back and absorb the wisdom of Marton and Svensson (1979):

> ". . . . the choice of action in every concrete situation must be based on profound knowledge of and familiarity with the specific circumstances. The choice of action has to be made by those who run the risks and who know the conditions: by the participants themselves. Strategic choices can thus never be derived from any general formulations. The relation between theory and practice should therefore be of an emancipatory character. The theory should raise the level of awareness in the participants and in this way indirectly increase the likelihood of better, more considered, and open decisions."

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PART TWO

Exploring the Developer's Crisis of Identity

CHAPTER 4

The Developer's Identity Crisis

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The Problem

One of the major problems in Distance Education is that many professional developers suffer from an identity crisis. This is not surprising as institutions often have great difficulty deciding whether the professionals in Distance Education are administrators or academics, developers or facilitators. Indeed, staff with schizophrenic professional identities are not uncommon in External Studies departments.

This identity crisis in Distance Education impacts upon development work. Self identity reference points are all important for a developer is trying to encourage others to move away from their own reference points to develop teaching material in a mode of education which is often foreign to them.

Titles and status can be an important influence on the way clients perceive the developer's role and on the credibility which subsequently is given to the development ideas being espoused. I myself have been called Senior Tutor in Extension, Senior Education Officer, Development Officer and Course Development Adviser. All positions were basically development positions in tertiary institutions in Distance Education, yet academic responses to my development ideas varied with my title and whether I was classified as an academic or an administrator. Furthermore, many subject specialists are very reluctant to co-operate with developers who carry out research and development based on a role which does not accord with academic perceptions of a developer's role.

The crisis is real and serious. The crisis is not that professionals in Distance Education development do not know what they are doing, for most do, but rather it results from the worrying perception that everyone else seems to be doing something different.

This variation, indeed confusion, occurs because institutions, and often the professionals themselves, do not clearly identify the stage which the institution is at in terms of development in Distance Education teaching material. Nor do they determine what role the developer subsequently can be expected to perform in such an institution. Before I go on to examine the three major development stages in Distance Education institutions and how these affect the role that developers can play in the institution, let me define what I see as the three crucial development roles in Distance Education - that of educational developer, that of instructional developer, and that of instructional designer.

Development Roles In Distance Education

A useful starting point is Beauchamp's (1968) argument that education can be viewed as being composed of knowledge about curriculum, counselling, administration, evaluation, and instruction. The area of instruction can in turn be viewed as being composed of five activities: design, development, implementation, management and evaluation . Each of these components can be viewed as a professional activity with its own discipline.

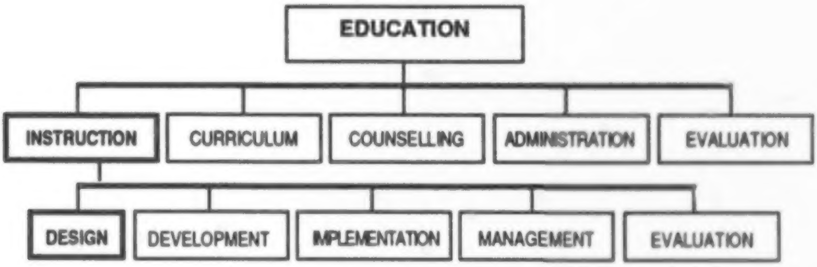

Figure 1. The Relationship between the Areas of Inquiry within Education

Education Development

Educational development in Distance Education can be seen therefore as being concerned with understanding, improving and applying methods of developing instruction, curriculum, counselling, administration and evaluation.

As a professional activity it is akin to determining the ultimate shape of an architect's blueprint by influencing each of the architects themselves. It is the process of using staff development strategies to influence the form of instruction, curriculum, counselling, administration and evaluation so that they are appropriate for Distance Education.

The result of educational development as a professional activity is that Distance Education instructors are able to generate teaching material within their discipline and apply organisation structures suitable for specific Distance Education situations.

The discipline is concerned with producing knowledge about the diversity in Distance Education procedures, establishing for Distance Education the optimal combinations of instruction, curriculum, counselling, administration and evaluation, as well as determining the situations in Distance Education in which such combinations are optimal.

Instructional Development

Instructional development in Distance Education is best defined by adapting the words of Silber (1977):

> 'Instructional development in distance education is a systematic approach to the design, production, evaluation and utilisation of complete systems of instruction, including all appropriate components and management patterns for use at a distance.'

It should be noted that Silber argued that instructional design is only one phase of instructional development. The professional activity of instructional development is like constructing a building from the architect's blueprint. It is the process of prescribing and using optimal procedures to create education appropriate for distance teaching material.

The result of instructional development in Distance Education as a professional activity is the production, usually by a content specialist and a developer, of teaching material appropriate for distance teaching. The discipline is concerned with producing knowledge about diverse development procedures, the optimal combinations of procedures, and the situations in Distance Education, in which such development approaches are optimal (Reigeluth, 1983).

Instructional Design

Instructional design can be seen as being concerned with understanding, improving and applying methods of instruction. As a professional activity carried out by professionals in instructional development it is the process of deciding which methods of instruction are best for bringing about desired changes in student knowledge and skills for a specific course content and a specific student population.

The result of instructional design as a professional activity is something like an architect's blueprint for Distance Education instruction. This blueprint is a prescription for the methods of instruction which should be used for the content and students of the particular Distance Education course .

Instructional design as a discipline can be seen as being concerned with producing knowledge about optimal blueprints for Distance Education - knowledge about diverse methods of instruction, optimal combinations of methods and situations in which each of these instructional methods is optimal for education at a distance (Reigeluth 1983).

A Personal Analysis

Having borrowed heavily from Reigeluth (1983) and Gustafson (1981) to define the three crucial roles in the development of Distance Education teaching materials, it is now necessary to give a more personal analysis of the problem of identifying Distance Education institutions in terms which relate to teaching material produced within the institution. Although this analysis is largely based on experience in the University of Papua New Guinea, Capricornia Institute of Advanced Education, and the University of New England, all dual mode Distance Education institutions, it does draw on a wider Distance Education knowledge base.

Stages of Development in Distance Education Institutions

There are three basic steps in developing Distance Education teaching material in dual-mode institutions:

Firstly, there is a necessity to establish the mechanism by which the majority of the materials can be put quickly and easily into an adequate written DE format (this first step can be called the Transformer Stage).

Secondly, there is a need to establish excellent multi-media Distance Education courses which act as models for what can be achieved with extra effort (this second step, can be called the Multi-Media Transformer Stage). It is recognised that the production of excellent multi-media material requires time, effort and support, which is not clearly reflected in the level of improvement of the material.

Thirdly, in the longer term there is a need to establish the basis by which the process of developing unique Distance Education material from scratch can begin, rather than merely reworking primarily internal style material (this third step can be called the Generator Stage).

INSTITUTIONS STAGE OF DEVELOPMENT OF TEACHING	PROFESSIONAL ROLE OF DEVELOPER
1. **TRANSFORMER STAGE**	**EDUCATIONAL DEVELOPER**
2. **MULTI-MEDIA TRANSFORMER STAGE**	EDUCATIONAL DEVELOPER AND **INSTRUCTIONAL DEVELOPER**
3. **GENERATOR STAGE**	EDUCATIONAL DEVELOPER INSTRUCTIONAL DEVELOPER AND **INSTRUCTIONAL DESIGNER**

Figure 2. The Relationship Between Development Roles and the Stage of Development.

It is recognised that not all teaching material in an institution may be at the same stage. Nevertheless, it is argued that the predominance of one stage or the other can be taken as an indication of which stage the institution, whether dual-mode or not, is at in Distance Education teaching material terms. It is vital to do this, because this in turn ultimately dictates the role that the professional developer should, and indeed can, play at that stage.

If the institution is at the Transformer Stage, then the role that the professional developer should, and can adopt is one of an educational developer concerned, through the content specialist, with improving and applying methods of developing instruction, curriculum, counselling, administration and evaluation. Thus staff development strategies are of prime importance and Hall's (1974) model of stages of concern adapted for Distance Education by Meacham (1982) and Eastcott (1981) are important contributions to developing such strategies

If the institution has moved on to the Multi-Media Transformer Stage there is a two-fold role for the professional developer: that of educational developer and perhaps, in a subordinate position, that of instructional developer who systematically approaches design, production, evaluation and utilisation of complete systems of instruction in all forms of media appropriate for Distance Education. The research work by Gustafson (1981) is a useful summary of the various modes of instructional development. The research by Gerlach and Ely (1980), Kemp (1977), Davis, et al. (1974), Briggs (1970) and Decco (1968) is of seminal importance to the instructional developer.

If however, the institution is operating at the Generator Stage, then there is a threefold role for the professional developer: that of educational developer, that of instructional developer in a subordinate position and that of instructional designer, perhaps in a further subordinate position. The research work by Reigeluth (1979), Scandura (1973, 1976, 1983), Reigeluth and Stein (1983), as well as Gagne and Briggs, is important to the instructional designer. A useful summary to these prolific seminal authors is Aronson and Briggs (1983).

Of course one person can perform more than one role, and indeed that is often the basis of the identity crisis. Nevertheless, experience suggests that if one can determine the stage of institutional development in teaching material terms one can then begin to fix one's professional role within it.

Experience also tells one that institutions do not always neatly fit into just one of these stages of development. For instance, in my experience alone, only the University of Papua New Guinea was at a discrete stage of development - that of stage one; Capricornia Institute of Advanced Education was a mix of stages two and three; while the University of New England is still at stages one and two (although since writing the first draft of this chapter some material at stage three has been produced). In such cases the professional role does not neatly fit into one of the three roles defined: it is rather a mix of the three roles. It is a mix, however, in which the component parts can be understood, and it therefore creates an awareness of the complexities of one's professional role, rather than contributing to a general inchoate mix which results in the professional identity crisis observed above.

Conclusion

The problems of developers and institutions in Distance Education suffering from an identity crisis can be resolved by linking the developer's role to the institution's teaching material development stage. Such a move also reduces academic suspicion of developers carrying out activities, including research and development, which are not perceived as relevant to the institution.

The establishment of an appropriate development role and reduction of academic suspicion of developers create a sound basis for the improvement of teaching material. Moreover, such improvement should continue until the next stage of development is reached and, with a correct redefinition of roles, the process can be repeated.

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CHAPTER 5

Defining Educational Development in Distance Education

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In 1970 Schutz wrote, 'Writing on the nature of educational development at the present time is as speculative as writing on the nature of industrial development would have been in the seventeenth century'. Similarly, writing on the role of the educational developer in Distance Education today is fraught with difficulties.

The whole question of definitions for educational development and instructional design, and for that matter educational technology, is important. The problem of confusion about the role of the educational developer is caused in part by the profession itself. It has adopted a variety of terms. It lacks definitions of its own terminology. This is because the role itself is very diverse.

Parer (1983) believed there was a great need to clarify what we mean by an educational/instructional developer and to clarify the function of instructional design. Rowntree (1982) in the preface to the second edition of his book *Educational Technology in Curriculum Development*, found that educational technology had become more diverse since 1974 when the first edition was written. He stated, 'we may even find it practised under different banners: educational development (which is my own preference), staff development, applied educational science, instructional design and so on'.

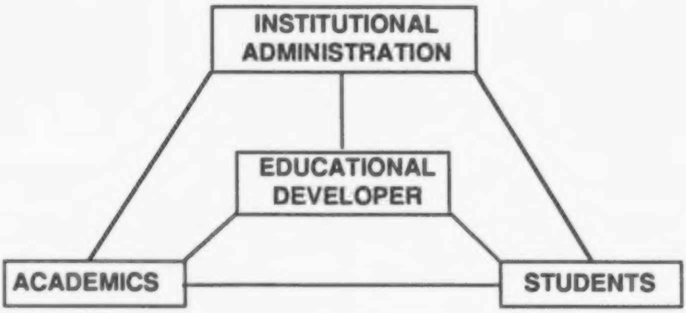
The same issue was taken up by Shaw and Taylor (1984) who speculated on the effect that the terminology of instructional design has on both the activity of instructional designers, and the perceptions of their activity by teaching academics. The terms 'instructional' and 'design', they believed, implied a concern with teaching and arranging the instructional aspects of teaching. This, they wrote, was the basis for the instructional designer's activity. Almost all the procedures and research relate to the delivery system.

The advantage of using the term 'educational' rather than 'instructional' is that it implies the learner is the centre of attention rather than the instruction. Education has the aim of developing life-long learning. A standard definition of development is 'the systematic use of scientific knowledge directed towards the production of useful materials, devices, systems or methods including design and development of prototypes and processes' (Schutz1970). The challenge for the educational developer in Distance Education is to grasp the potential of Distance Education to develop independent life-long learning skills. Often one of the constraints to this is the dual mode institution. Distance Education should be student orientated. On-campus studies are usually subject orientated. Distance Eucation is seen by most staff as an inferior form of university study Anwyl and Bowden (1986).

Shaw and Taylor (1984) went on to suggest that instructional design might have fuller academic acceptance if it were more deeply involved in research and development. They suggested a person carrying out this role, would then be designated an Instructional Research and Development Officer.

The Role of the Developer

The educational developer is a mediator. The prime objective of the developer is to mediate between the lecturer and the students. This mediation should produce the best possible communication strategies within the limitations of the resources available. Most of the literature on educational development is written from an academic's perspective. The focus is on the lecturers who are but one of the parties. The other party (often only implied and not stated) is the students. This may lead to courses written for peers rather than for students.



Boud and McDonald (1981) in discussing educational development through consultancy, enunciate three models that an educational developer might adopt. These three models are:

- the professional service model
- the counselling model
- the colloquial model

As they point out, the educational consultant needs to draw from each of these models. It is necessary to work flexibly and eclectically in order to respond to the unique demands of each situation.

Certainly Distance Education places unique demands on the developer. While lecturers acept on-campus activities as part of their jobs, off-campus activities must be seen in a completely different light. The reasons for this are many and varied - among the leading ones are:

- the course enters the public domain and is subject to public scrutiny

- feedback and student support are not within the lecture room; problems and criticisms are more public

- the new technologies of education may present a threat rather than a challenge

- the development and writing of material demand extra time for the academic that is not often recompensed
- there are often inadequate ancillary support services - library searches, editorial services, graphic artists, media producers, etc
- assignment turn around can be monitored
- teaching in off-campus mode is less satisfying because of the lack of personal contact

All these difficulties (real and imagined) make the role of the educational developer a more challenging one. The decision to develop an external mode of education may not be met sympathetically by all institution staff [Anwyl and Bowden 1986).

One of the major roles of the developer then is that of a change agent, a term which is not now in vogue. The role of change agent equally applies to the terms developer, enabler, or consultant for all involve planned change.

The educational developer may have as a primary role the difficult task of establishing and maintaining the credibility of Distance Education in the eyes of academics. The whole topic of establishing credibility has been examined by Dodd (1981), Jevons (1984) and Smith (1985) to whom the reader should refer.

The other major role is that of a developer bringing organisational and technical expertise to apply to a problem that has been identified by a client (Boud and McDonald 1981). This role may be described by way of an analogy.

An Analogy

It is useful to take a new experience and relate it to a set of analogous experiences that helps us to understand it. Analogies provide an explicit comparison between one area of knowledge and another area of knowledge that is completely outside the first (Ortony 1979). The analogy must contain one familiar element (the vehicle) that is within the prior knowledge of the learner. The other element which is distinctly unfamiliar is termed the topic (Reigeluth 1983; Curtis and Reigeluth 1984).

A useful analogy is to consider the developer as an engineer involved in a consultant role with property developer and architect.

Property developer/builder	= Student
Engineer	= Educational Developer
Subcontractors(s) Supplies building materials and services.	= Academic Staff

Table 1

The property developer - who is both builder and owner - is the individual student. The lecturer is the supplier of building materials and also subcontracts to install specialist materials and services. The professional firm of engineers or consultants needs to be aware of the needs of the client, the locality, the foundations, the most desirable building practice, and standards to be reached. One of the first jobs of the consultants is to ascertain the client's needs.

Similarly, once the needs of a student are known then the student's readiness to learn and at what level can be ascertained. The aims and objectives of the course and the designing of the curriculum then can be considered.

The consultants need also to consider what type of material is most suitable for the building and how it is to be placed in position. The educational developer similarly must consider how to facilitate meaningful learning. Research by the Goteborg group (Marton and Saljo 1976) into how students approach studying has highlighted fundamental differences in approaches to studying.

The analogy of a high rise building being built is helpful in thinking about approaches to studying. In thinking of such an approach it is valuable to remember the builder i.e. the student who is responsible ultimately for all that is learnt. The subcontractor and suppliers may supply excellent materials and install them correctly but all fails if the builder's building practices are below standard.

The Goteborg group has distinguished two sorts of variation in students' approaches to new learning. Firstly there is the horizontal dimension. This refers to which things are attended to. Some sort of mathemagenic devices may orientate learners towards particular content. What structural devices do the lecturers use to help students structure the content?

Second there is a vertical dimension which refers to the level of approach - not what is attended to but what quality of attention is involved. This quality of attention is one of the qualities that the Goteborg group has called deep processing. Surface processing can be compared to prefabricated materials delivered to the building site. The builder merely places them in position. Very little processing is required.

Deep processing requires a recognition of the concepts involved. The material is thoroughly processed and worked through. For example, in our analogy, concrete with reinforcing thoroughly vibrated and processed, would be placed in boxing and set in position. Similarly wood, cut, planed and nailed would be 'deep processing'.

Ultimately the property developer is responsible for how to use the property. What the consultants have designed may never be put to the use that was envisaged. The designers may have had some vision regarding the use of parts of it. That vision may not be shared by the property developer. This analogy is further described by Fenwick (1985a).

In the final analysis it is the learner who decides how the material is to be used.

Hlynka and Nelson (1985) have discussed the engineer as a metaphor for an educational technologist. They quoted the National Special Media Institute project (undated) which gave nine functions of an engineer.

1. Define problem
2. Analyse setting
3. Organise management
4. Identify objectives
5. Specify methods
6. Construct prototype
7. Test prototype
8. Analyse result
9. Implement recycle

Case Study

For 20 years Lincoln Agricultural College, Canterbury, New Zealand has been offering a service to back up learning while students undertook practical experience on farms as part of their degrees and diplomas. This service took the form of a newsletter/notes with questions sent to all students. The answers to the questions were sent in the next newsletter.

The New Zealand Agricultural Training Council (NZATC) was involved in developing a task list for cadets in 1978-1980. The College took this list and associated task guides and used them to produce a set of modules. These modules or learning packages have three to six tasks incorporated in each module. The modules were developed using the following mastery learning principles:

1 The curriculum was organised in terms of objectives.
2 Units of work were organised under objectives.
3 Testing was based on the objectives.

The students were free to choose what modules they wished to study and when. They were free to refer to any other sources to assist in their learning. Such an approach was used to personalise education. "It gave choice to the consumer, making education about helping people learn rather than teaching, and so empowering learners" ((Pearson 1985).

The role of the developer in the process was that of a change agent. The role was a difficult one for a number of reasons. Firstly, the academics received no rewards (other than personal satisfaction) for involvement. Secondly the College received no finance for funding such a development. Thirdly many academics did not feel competent to discuss practical tasks even within their own disciplines.

What resulted was a self funding operation using servicing industries, farmers, farm advisers and others to develop a series of packages. In each case the educational developer had to play a leading role. These learning developments towards individualisation are described further by Fenwick (1985b).

Models for Educational Development

Baath (1979) has reviewed the seven contemporary teaching models of Skinner, Ruthkopf, Ausubel, Egan, Bruner, Rogers and Gagne. He found all had some application to distance teaching. In terms of educational development he found "the stricter the control towards fixed goals, the easier is the application of the model to correspondence education".

Distance Education offers potential over on-campus education in shifting the accent from subject orientated learning. This implies five education advantages as stated by Jevons (1984):

1. The student is flexible in terms of ease of access.
2. The student is free to approach the ideal of the independent, autonomous or self-directed learner.
3. The interface with employment is more intimate.
4. The mode offers the opportunity for cumulative improvement in pedagogic quality.
5. Staff development can be through course teams.

The seven models clarified by Baath all have relevance to Distance Education. The amount of control exhibited by the institution will determine the type of model adopted. The models should not be seen as distinct entities in themselves but as points on a continuum just as control and independence are at either end of an educational continuum.

Reigeluth et al. (1980) have provided an elaboration theory of instruction which gives a model for sequencing and synthesising instruction. It is based on an amalgam of the work of Ausubel (1963, 1968) and Gagne (1977). It does not appear to give an additional theory of a design model directly applicable to Distance Education.

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CHAPTER 6

The Amicable Guerrilla
Working in a Traditional University

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A Guerrilla in Academia

I wasn't always a guerrilla. As many rebels know all too well, it is the circumstance that leads one into this kind of existence. It is the circumstance of the university that calls for the selection of methods which can be categorised as "guerrilla" in nature when working in instructional design. A guerrilla has been defined as

> "n: a member of an irregular usually politically motivated armed force that combats stronger regular forces."

It follows that guerrilla tactics are employed when the conventional strategies will be openly thwarted. As this paper will show, the character of the universtiy is such that the instructional designer in doing her/his work is viewed as assaulting the rights and responsibilities of academics employed to do teaching. Faculty have been sceptical of instructional designers (Shrock 1985; Heinich 1984; Shaw and Taylor 1984). In some ways this stance is justified. In other ways, as will be demonstrated, this stance is counter-productive. If the instructional designer is to have an effect on the teaching done in the university, the boundaries of academic departements will necessarily be transgressed. But the way in which the instructional designer proceeds will lay the groundwork for future collaboration or lack of it.

Heinich (1984) lamented the lack of integration of educational technology and its principles, ie, instructional design, in educational institutions and the resistance to adopting principles associated with the development of mediated instruction. This applies to the instructional designer in higher education as well. In a naturalistic study of the work of instructional designers in higher education Shrock (1985) confirmed the difficulties met by instructional designers in higher education and the unclear, marginal role of the designer relative to academic departments. Holmberg (1985) and Shaw and Taylor (1984) also allude to an animosity or conflict situation both in Distance Education and in the classroom.

The way in which instructional design is practised is necessarily related to the character of the specific organisation. Etzioni (1960) stated that the operations undertaken by a department in an organisation are related to the character and goals of the overall organisation. For example, the practice of an accounting office for an insurance company will be different from its operation in a university because the goals and character of the university are different. The accounting office in the insurance company is central to the goals of the company while in the university the same office is peripheral to the goals. The same could be said of the practice of instructional design. The practice of instructional design takes on different methods and ways of operating depending on the organization.

My experience in instructional design runs the gamut from the education team approach used by University of Mid-America (UMA), to a health care team approach exercised in health care in institutions, to being the designer of instruction for industry, to working with faculty in the traditional university. Much of my "graduate upbringing" either tacitly or explicitly referred to the course team approach fostered by The Open University, using instructional designers, content specialists, production specialists, evaluators, and others who functioned in their various capacities to create an effective course package. At UMA, patterned after The Open University, the experience was a repetition of what I had learned on paper in graduate school. As an instructional designer I was responsible for determining the strategies for instruction, working with a content specialist, who provided the content, and with a production specialist, who packaged the course for delivery. Content experts were normally drawn from the ranks of the university faculty on contract to perform this function. In this relationship it was understood from the inception of the project that a team approach would be used, that the instructional designer would determine instructional strategies, that the production specialist would package, and the evaluator would provide data to each of us on the effects of the package. Generally, this scenario held in health care institutions and in industry. In the university setting something different appeared to be happening.

I was contracted to perform instructional design on an experimental basis for a university engaged in producing televised courses and was sandwiched between a "production specialist" and a university faculty member who was being paid overload to prepare the course. Over coffees with the production specialists I heard their sobs about difficulties they experienced working with faculty members who wanted the courses their own way or would not bend to production standards in presenting their courses. I made two mistakes working with the faculty member. My first was to gingerly suggest a different approach to the manager of the on-campus class. My second was to ask him to define his outcomes in behavioural terms. The experiment did not prove successful, and I was discreetly dropped from the team.

Shortly thereafter I was fortunate to work as an instructional designer in a health care institution and to teach instructional design part-time at a local university. Health care proved to be more amenable to the course team process I had known. The content specialists I worked with were practising nurses, physicians, or other health care specialists who acknowledged their limited background in education practices. Education appeared to have a secondary function, the primary one being the creation or maintenance of health. Likewise, it was easy and in line with the principles of health care to use a competency-based approach. At the same time in the university I used a competency-based approach in preparing the course. While this approach aided me in formulating the course, it left me with a vague feeling of something missing when I evaluated the students' work. Grading the students' papers I could see that most had mastered the concepts but that some projects excelled in the ways in which they manipulated the concepts. It hit me: there is more to life than competency-based learning. That's what the university is about.

Mount Saint Vincent University administrators thought they were hiring a specialist in instructional television to set up a new program to deliver university credit courses using interactive television as the primary technology. They were not familiar with the term instructional designer (this was the case in many Maritime Canadian universities), and were not expecting an instructional designer. It is fair to say they thought they were "buying" a production specialist rather than an instructional designer specialising in educational television.

In setting up this distance delivery system for the university, it was important to ask questions about the nature of university organisation to determine a means for designing an operation to accommodate Distance Education. Partly because of the technologies used, partly because it has been a reinforced assumption through the centuries, a traditional universtiy education has been taken by faculty to mean that students come to campus and engage in face-to-face learning, usually through the lecture method (Lam 1985; Jevons 1984). Academic policies have been put in place with this assumption in mind (Heinich 1984). Faculty have been given the responsibility for face-to-face instruction whereas in courses slated for distance delivery, they are compensated separately (Carl 1985).

Coming into this milieu, I found myself fighting old battles over the effectiveness of educational technologies and Distance Education. Faculty raised questions regarding the pedagogical effectiveness of the technologies the project employed. The question of parity between on-campus and distance methods was hotly debated. The possibility of a student getting a degree but never setting foot on the Mount Saint Vincent University campus was tantamount to heresy. In total, the atmosphere was one of extreme scepticism about Distance Education and educational technologies. There was a tendency to invoke standards and assumptions about the university in these debates without questioning the underlying intent of these assumptions. In these discussions I began to get a sense of the mission of the university, but it became clearer that I needed to find out more about the nature of the university before articulating an approach to instructional design.

The Lay of the Land

In this organisational analysis it was important to get to know the university, how and why it operated in the ways it did, and to articulate the practice of instructional design relative to this environment.

The university is knowlege-in-process rather than knowledge-as-outcome. Knowledge is not a static commodity but is an on-going transformation in the university. In my discussions with faculty the terms "participation" and "dialogue" came up again and again. I began to get a sense of the university professor not as the source of knowledge but as the processor of knowledge: a person who was continually working on the knowledge and refining it as new information and insights became available. Lane (1985) describes the outputs of the university to be as many as the scholars in its ranks. Clark (1983) refers to the university as an 'organised anarchy' of autonomous parts which process knowledge. Good and Dowdeswell (1982) [Baldridge (1971), and Mayhew (1980) paint a picture of individual faculty working to transform knowledge and whose individual transformations of this knowledge collectively work to define the university. While course objectives are committed to paper, the intent goes beyond the words.

The intents of a university level education appear to be three-fold: to provide students with a basic competency in a subject area, to enable students to decide how to employ in a variety of settings the knowledge and skills they have gained, and, finally, to enable students to process and reconstruct knowledge in much the same way described above.

In developing methods for these intended effects, faculty have elected individual and group dialogue, tutorials, after-class discussions, and (unfortunately) the lecture. All of these have been cited as important aspects of an on-campus education. These have also been cited as reasons for not proceeding with Distance Eucation since the university "milieu" would be missing from the learning of distance students. Having listened to these arguments, I am tempted to make two observations. The first is that while faculty espouse these intents, the implementation of these strategies appears to be spuriously undertaken and not necessarily with as much attention to the intents as it could be. That is, their instructional intentions are not normally clearly defined and the methods do not necessarily relate to the intents. Secondly, I observe that the intents of a university education seem to have validity and call for a broader-based approach to the practice of instructional design than has normally been conceded.

The tradition of instructional design is based in scientism as described by (Koetting 1979; Reigeluth 1983) using a systems approach. While this tradition has value for higher education, it is only partially appropriate. Habermas 1973) presents a convincing argument against the use of a systems approach without questioning the appropriateness of its assumptions for the task, and specifically for the purposes of higher education. The use of a systems approach presupposes a "system", structure, or standard which is used in making judgments which will influence the development of instruction. If one goes beyond the "system" or through instruction "redefines" the system as is done in higher education, the logic of a systems approach comes into question. A systemic approach (Mitchell 1981) or a constructivist approach (Fosnot 1984) is perhaps a more suitable basis for approaching instructional design in the university. These approaches emphasise the "individualism" of knowledge as it is processed in the university and as it is intended to be processed by the individual student. Such approaches are not necessarily "outcome-oriented" but appear to be flexible enough to accommodate individually determined outcomes and shifts in outcomes as the instruction proceeds.

The university also differs from other settings in that while the outcomes of most organisations are limited, those of the university are as many as the faculty it employs (Lane 1985). Knowledge, in the university, is a process of individual creation by each faculty member. The outputs of each faculty member: the research, the teaching, are what gives the university its credibility in the community as opposed to the university being a credit unto itself. Faculty give the university its right to exist (Mayhew 1980).

Distance Education, on the other hand, has normally been structured to be packaged and based on a team approach (Holmberg 1985; Jevons 1984;

Shaw and Taylor 1984). Jevons points out that the use of the team approach in the university has been difficult. Understanding the university as being a multiplicity of individual knowledge creations, it is easier to understand the misgivings of faculty in accepting the attempt to subdivide/ reassign functions to a variety of specialists when the tradition has been to have this process encapsulated in one scholar.

Packaging of distance courses into pre-recorded formats also presents difficulties in the synergistic instructional situation of the university . In determining the instructional methodology used to present distance courses, then, it appears important to recognise the place of dialogue as both a feedback mechanism and as a step in this process of the evolution of knowledge. It is questionable whether the totally packaged correspondence course, then, can truly represent a university level experience.

As knowledge is the creative act of each faculty member and as the university derives its credibility from its faculty, the concept of the traditional organisational hierachy changes as well. The authority to administer the university is granted to the administrators by the faculty (Baldridge 1971). The President and senior administrators may hold power in the ability to channel resources, but in granting academic credibility, the university Senate and faculty administered channels are equally as powerful. In some ways, then, the university is an inverse hierachy in that the administrators are accountable to the faculty for their actions and for their right to exist (Mayhew 1980].

The implications for initiating change in a university and specifically, for integrating Distance Education into this structure are great. The widely accepted concept of organisational change emphasising top-down support for innovations holds less weight in this system of "gold-collar" workers. Change necessarily emanates from the faculty ranks (Clark 1983; Lane 1985; Good and Dowdeswell 1982; Rutherford et al. 1985).

Faculty, however, do not necessarily perceive a need to change to accommodate instructional design. Most faculty equate expertise in a subject with the ability to teach the subject (Shaw and Taylor 1984; Lam 1985). This mindset has influenced the selection of outcomes, the strategies employed , and the types of evaluation carried out in the university. It is seen in the higher priority granted to research as compared to teaching in promotion and tenure decisions. Faculty development in instructional techniques is regarded as remedial as opposed to developmental (Moses 1985; Botman and Gregor 1984; Hynes 1984). This was the gestalt into which instructional design in Distance Education was to be introduced. The kind of situation described in the literature was observed at Mount Saint Vincent University when I assumed the position as coordinator of Distance University Education via Television. If each faculty member is an example of knowledge in process and a living interaction with students who are also encouraged to work on this knowledge to transform it, the approach used in the practice of instructional design had to be compatible with this environment. The intents of instructional design, then, were modified to enable each faculty member to engage in this individualistic creation, to provide her/him with a set of tools and instructional design skills, and to enable a multitude of constructive interactions between student and professor and student and student to occur. In total, my character as an instructional designer mutated from creator of materials/events to consultant and change agent in this highly synergistic environment. What a challenge!

Tactics of an Amicable Guerrilla

Through examination I gained a better understanding of the university and its faculty and a respect for their potentials. There were values which could be explored for the theory and practice of instructional design. There were also values in instructional design which could benefit the university processes. In short, the potential existed for a mutually beneficial relationship. Given that I was considered an outsider to the classroom process and derived my credibility from my technical and Distance Education-oriented knowledge rather than my skills as an instructional designer, my incursion into the classroom was best accomplished wearing the colors of the tech- nological expert. While finding difficulties with some of the practices in the classroom, I valued and respected the kind of milieu and multi-variate intent the university was working toward. The situation dictated that my tactics demonstrate this respect. I had to be an "amicable" guerrilla.

If faculty were to regard me as an instructional designer rather than as a technologist, it was necessary to build credibiltiy as an instructional designer in academia. The role of consultant appeared more appropriate in relating to faculty. Development was able to proceed because of the nature of the Distance Education project to which I was attached, and through a variety of approaches.

Because faculty give the university its authority to exist, because they have been authorised to develop and present courses, decisions concerning the character of these courses rest with faculty whether the course is a distance offering or face-to-face one. I was given more leeway to suggest alternate strategies and more leverage in enforcing these strategies for distance courses. Normally, encroaching the sanctity of the classroom is not welcome by faculty. But in the DUET Project the groundwork was laid to enable my presence in the classroom. The concept of the Distance Education class "piggybacking" on the face-to-face presentation automatically placed me in the classroom. In the consultations regarding the character of the distance course, I was authorised pro-forma to examine the character of the classroom instruction. Intents of the instruction, sequencing, and types of responses wanted could be questioned to determine the effect of the use of technologies on these components. Recommendations for change were usually accepted as valid and seriously considered not because of their validity for on-campus students, but rather because these were accepted as valid for distance students.

Holding a doctorate in instructional design appeared to be of primary importance in being heard by academics and in establishing credibility. Teaching courses at the university and having good teaching evaluations appeared to help build credibility. I was seen to be doing the same type of work as were faculty. Teaching a graduate level education course in instructional design has also appeared to have an effect. In teaching this course I was seen as preparing students at a higher level, some of whom were preparing to become university faculty. Some of the university faculty enrolled in the course to learn more about instructional design. Volunteering for faculty tasks such as proctoring examinations has built credibility in two ways. It placed me in a position to observe directly and question processes, and to plan with them. Serving on the Faculty Association's Education Committee demonstrated a willingness to work with a small committee of faculty to design faculty development events. I was given the right to address issues of pedagogy as they affected on-campus course delivery.

Faculty development workshops on DUET became regular events. The intent of these workshops was to create an atmosphere for informed, constructive discussion of DUET and Distance Education as they related to issues articulated by faculty. While faculty came to the workshops to experiment with the technologies, issues relating to instructional design were covered as well. Open dialogue was encouraged to enable a fuller treatment of issues seen as important.

The provision of hard data about the effects of DUET and instructional design were germane to the discussions. In other organisations I evaluated educational programs because of my personal interest in their success or improvement. In the university, evaluation and specifically, evaluation research, takes on increased importance since research and scholarly pursuit are part of the university. Presentation of evaluation results, faculty input in the evaluation design, and discussion of the results by interested parties were on-going events which contributed to the acceptance of DUET and of the practice of instructional design.

In total, my impact was greater in areas in which DUET technologies were employed because faculty attitudes were more open to my intervention. Such an approach to instructional design in the classroom takes more time to gain credibility. If I was to be listened to as an educator, I had to be seen as one of them and respect their standards for assessing my work and Distance Education. My goal was to create as much discussion on instructional design and Distance Education as possible, to use university values to develop each course for Distance Education and to be sensitive to faculty concerns in developing a Distance Education structure within which they could work.

Receding Into the Jungle

An instructional designer in academia is in danger of being an open target for criticism and folly. Blending into the jungle has several distinct advantages: learning to accept academia and its life, gaining an understanding of its laws, increasing the ability to move without being obtrusive and thus effect change. Being the single instructional designer for a universtiy of 200 faculty, it made sense to work towards the presence of instructional design in all course development efforts rather than the few only one person is capable of handling. To understand the purpose of quality instructional design, faculty should use these principles in their own course development efforts, and use them in working with their colleagues. My role shifted from instructional design practitioner to change agent. Targeting faculty and departments with high credibility in the institution and working slowly to initiate both departmental and individual changes was the goal.

As time passed and faculty came to know me, more trust developed. In working towards this change, there have been some practices I have found useful. I have found it effective to do more questioning than telling while consulting with faculty; to use terms with which they have familiarity, to refer to instructional values they respect, to recognise the right of the faculty member to refuse my advice; to express an interest in how faculty are doing once they have employed the advice; to enquire into departmental issues such as class size and other problems to which departments are seeking solutions; to be a trusted confidant with whom faculty can discuss problems without fear that these will be repeated.

Working with individual faculty is only part of the change process. Working to change the macro-structures of the university is important to the establishment of on-going policy for Distance Education and instructional design. Facilitating discussion of instructional quality in key academic and administrative committees and in key administrative structures such as Senate is integral. There are structural inhibitors to quality instruction which should be addressed to enable faculty to implement appropriate strategies. It is still problematic that the Committee on Promotion and Tenure, for example, recognises research over teaching in making decisions about faculty members, or that the faculty evaluation instrument is biased in favour of the lecture method and penalises faculty who attempt innovative strategies, or that faculty are hired on the basis of their ability to give an entertaining lecture rather than on their ability to design an instructionally sound unit. There is much work left to do at these levels to enable instructional design to become policy as well as practice in the university.

In total, the role of the instructional designer in the universtiy changes greatly compared to the role in organizations in which education is not the primary output. The multiple scholarly outputs, the knowledge-as-process orientation, the instructional intents which go beyond competency to make a university education unique for each student, demand an approach which has as its goal the development of individual faculty in skills which will enable each of them to provide effectively a process-oriented education and the change of university structures to ensure sound pedagogy. The work of another amicable guerrilla, Paulo Friere (1973), may be more applicable in the university than the work of Gilbert (1962). As Friere defined a need to use educational methods which result in critical consciousness and social change, it could be said that the instructional designer in academia strives to raise in faculty a critical awareness of the synergistic knowledge/ instruction interaction which they in turn pass on to students: turning us all into amicable guerrillas.

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CHAPTER 7

Fiddling While the Tome Turns:
Reflections of a Distance Education Development Consultant

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The invitation to write on educational development in Distance Education prompted a stream of thoughts about what to include in the allocated space. This is a central problem in distance teaching: what to do with the available text; other media, sadly, being relegated to the reserves bench. However, the problem is not only what to include - as content or curriculum, but also how to include it - as teaching method or pedagogy. I use the term pedagogy to mean the 'art, science and craft of teaching', irrespective of the age of the learner . Conveniently, the conventions of writing book chapters leave me with fewer decisions to make in this latter area. The matters of curriculum and pedagogy in Distance Education trouble me more than a little. I am very unhappy with the worldwide production (and reproduction) of tomes as distance teaching. By 'tomes' I am referring to the volumes of print as 'course materials' which are distributed to distance students . They seem to be monuments to our curricular stolidity and pedagogical ineptitude. And yet we - and this is also a self-confession - find it so difficult to break free from *writing* courses.

Why am I concerned about tomes? I recognise that I have seen some brilliantly articulated and beautifully illustrated course texts, but they especially can leave the student with a feeling of inadequacy in the face of such perfection, or (even worse) uncritical contentment with having been 'enlightened'. At least the poorly developed course texts have the dubious virtue of provoking some students to irritation and (possibly) protest. This sounds as if I am arguing for bad tomes rather than good ones; but really I am arguing that we need to be critical of the ways and extent to which text shapes our teaching (and thinking about teaching) in Distance Education. For the Distance Education consultant the problem is doubly com-plicated because, not only is there an uncritical acceptance by course teams of what Nation and I have called 'textual pedagogies' (1987), but also the contribution of the consultant is similarly limited. In essence, the pace of life on a course team is the pace of handover dates for print production. I shall use the term 'consultant' here to refer to the 'outsiders' who work with course teams in the development of distance taught courses. My experience includes being a course team member, an individual distance teacher and a consultant. I have been a Distance Education consultant for agencies outside 'traditional' education. This paper is a reflection on all such experiences and my use of the term 'course team' should be understood as inclusive of the various contexts in which Distance Education consultants work.

What leads me to be concerned about tomes? I feel the answer lies in my view of myself as a teacher or, more particularly, a type of teacher. My interest in teaching probably springs from my own schooling which I found to be ridiculous in its rigidity and conformity. My teacher training was born of British progressive education in the late sixties and seventies and it changed my view of the world and how I learned about it. I was overtaken by a desire to learn, question, research and write which saw me through an honours degree, masters degree and doctorate in nine years, including working at high school and university teaching for the final five. This desire has not been assuaged and it leads me to question the consequences of distance teaching tomes for the independence and autonomy of (mostly) adult students. This is not a plea for individualism, rather it is a challenge to understand distance teaching tomes as the deliberate, selective embodiment of culture and social structure which entraps students rather than transforms them. I shall expand on this notion and its implications by drawing on the contributions of theorists outside Distance Education. In so doing I shall focus such contributions on the work of the Distance Education consultant.

Mezirow (1981) uses the term 'perspective transformation' in his theory of adult learning. He argues that

> '... the egregious error of adult educators is to define our function as ... fostering behaviour change and to act as though we believe our principal task is to assess needs - asking people what kinds of course content they are interested in - to communicate ideas and to

> design exercises to develop specific knowledge, skills or attitudes for behaviour change ... this ... become(s) indoctrination to engineer consent.'

He links his notion of 'perspective transformation' to the 'meaning-perspectives' used by adults to make sense of and act within their social psychological worlds. Mezirow argues that adult education should lead to 'perspective transformation' as a form of, what Habermas describes as, 'emancipatory action'. In essence, he sees that adult education should develop a critique of knowledge and culture, and provide a focus for adults to reconstruct their meaning-perspectives and act accordingly.

Mezirow's approach sounds challenging, but what does it mean in practice, especially to distance teaching? It suggests that the curriculum of distance taught courses and the pedagogies employed should maintain the former as problematic and the latter as requiring openness and creativity. Hence, the curriculum of a course should encourage critique, questioning and debate on its content, rather than offering an apparently perfect synthesis of incontrovertible 'facts'. In order to do this all who are engaged in 'developing' a distance taught curriculum need to recognise - clearly, consciously and explicitly - that curriculum is a socially constructed (re)production of socially constructed knowledge, values and skills. Their curriculum development needs to be recognised as part of the social (re)production process. In this sense, Lundgren (1983) has argued that, 'social production involves not only ... material objects, but also ... symbols and the order and evaluation of objects and, simultaneously, the production of the conditions in society under which (it) continues'. He argues that, 'through upbringing and instruction', the reproduction of the knowledge, values and skills of the existing culture is transmitted from one generation to the next.

Both Lundgren and Mezirow point to understandings of curriculum which rarely pervade Distance Education theory, and which seem to elude the practice of Distance Education consultants. There appear to be several reasons for this which I shall now discuss.

Curriculum Supremacy, Pedagogical Invisibility

In the development of distance teaching courses it is the curriculum which usually galvanises the course team's thinking. However, such thinking is shaped by the forms of text and text production processes involved. Because distance teaching is thought of as text, the characteristics of text remain unproblematic, unquestioned and unchallenged, except in a few instances (e.g. Christie 1987). The texts written as distance taught 'courses' are typically sequentially structured curricula which contain implicit or invisible pedagogies. In practice, the students apply their own pedagogical strategies, usually shaped by the course assessment (Evans 1985, 1987). In effect, course teams rarely consider how they teach and how, and in what contexts, the students learn the curriculum. They assume that because texts have beginnings, middles and endings, the students will engage the texts and learn in this sequential, linear order. The teaching process for the distance teacher becomes one of writing text *as* curriculum. The fundamental trinity of questions: 'What do I teach? Why do I teach it? How do I teach it?' are never posed; only the first is given an answer in the shaping of text and, perhaps, the first two together are seen as 'answered' by external professional bodies. Viewed in this way, the students are removed by time and space from the distance teaching process. Hence, there are no opportunities for the glazed looks and stifled yawns of the on-campus classes to spread their messages to the teacher.

The Distance Education consultant has the task of trying to make the pedagogical question visible. However, the reverence for text in academe, and even in other forms of continuing education, is such that even pedagogical issues have to be posed in textual terms. So we find texts with 'in-text questions', 'activities', 'exercises', etc, being included as textual remedies to pedagogical ailments. Occasionally audio, video and telecommunications intervene. However, usually these are either the 'supplementary materials' to a textual curriculum and pedagogy, or a rare example of a distance teacher who has posed the trinity of questions. A problem for the Distance Education consultant is that the course does not 'exist' until a course team produces some of the text. There is little to grapple with before this point because the consultant is usually engaged after the course has been 'approved' etc. Sometimes, the consultant may be engaged to work on the 'remake' of a course. Here the pedagogical task is even more difficult because of the course team's difficulty or unwillingness to think beyond the original course tomes, which are probably already 'monuments' recorded on sundry curricula vitae, job applications and promotion requests. From governments and others there is mounting pressure to do more with less, under the guise of 'efficiency and effectiveness'. This only increases the course team's desire to turn existing curriculum tomes into others, and move on to the next task. The 'why and how' questions of teaching remain unanswered; pedagogy continues to be invisible.

Public and Private Worlds of Distance Teaching

Some feminist critics have used the distinction between public and private to demarcate the asymmetrical nature and power relationships of men's and women's lives (Imray and Middleton 1983). Men's lives dominate and help define the public sphere, through for example, breadwinning work, and women's lives occupy the private sphere, through for example, domestic labour. Since distance teaching is seen as text and because text has a high value in academe, the curriculum of a course is interpreted as a public document. Its exposition of the area of knowledge in question is publicly available for criticism by academic peers. This heightens the concentration of distance teachers' minds on the academic content or curriculum construction task and leads to an asymmetry between curriculum and pedagogy, and between the course team and the Distance Education consultant. The asymmetry occurs because the curriculum is a form of public, academic currency, whereas the pedagogy retains only private, intrinsic value to those who cherish 'good' teaching.

Because the Distance Education consultant is not regarded as an expert on the particular curriculum, the decisions about course content remain entirely with the course team. The consultant has some credibility in pedagogy, but pedagogy remains part of the private (and often invisible) world of the course. As I have said previously, there are pedagogies implicit in the use of text in distance teaching, but it is difficult for the consultant to encourage debate about them. Bernstein (1977) has argued that 'invisible pedagogies' are the most powerful of all in conforming the thinking of students to the intentions of those who control the pedagogy.

Most course teams would reject any such hegemonic intent, but the criticism will remain until curricular and pedagogical issues are accorded similar 'public' status. In effect, consultants have little power to shape the development of a course, partly because they remain confined to the private world of pedagogy. This is not to suggest that they all have little influence; but rather their power is so constrained and distorted that they cannot embrace and criticise the pedagogies *and* curricula in their work. In the same way, students are inevitably part of the 'invisible' and private world, and have little, if any, effect on the curricula and pedagogies they endure.

This problem is compounded when the work of Distance Education consultants is performed by people who have lowly status. Often they are not employed as academic staff and are treated as ancillary to the distance teaching process. Appointments are often temporary, part-time and junior, and vulnerable to the vicissitudes of politics and economics. Gender issues emerge because men usually avoid such appointments like the plague. In effect, many consultants are not regarded as 'public' experts in their fields, whereas, members of course teams are so regarded. The links between teaching, research and publication which engender credibility in academe are often limited or denied to the consultant. Such things interact to limit the power of the Distance Education consultant to do little more than 'fiddle' with the tomes turned out by course teams. This is not to deny that some consultants are appointed to academic positions and have the commensurate credibility from their teaching, research and publication activities. However, their power is still constrained as consultants to course teams by the curriculum - pedagogy separation. The difference is that in their teaching they are probably best able to consider critically their curricula and pedagogies as inseparable and interrelated. However, it would be unwise to underestimate the power of Distance Educational structures and institutions to demand conformity to textual pedagogies.

Towards Symmetry

I have referred to the asymmetry which characterises some of the fundamental features of Distance Education: between text and other media; between curriculum and pedagogy; and between course team and consultant. I would like to discuss some ideas for producing symmetry in these features.

The notion of symmetry in higher educational development stems partly from the work of Brandt and colleagues at the Centre for Research in Higher Education, Aachen, West Germany, (Brandt 1981). Kemmis (1980, 1984) has applied these notions toward developing 'symmetrical communications' in course teams in Distance Education. Werner and Drexler (1978) have outlined the theoretical roots of symmetrical communication as stemming from Habermas's theory of truth.

Kemmis (1980) distils the essence of the Aachen Centre's thesis down to the following:

> 'a working group tends to become communicatively incompetent, less satisfying for participants and less effective as a group capable of providing joint commitment to agreed action when communications in the group are distorted by considerations of status, internal power-politics or members' failure to respect one anothers' points of view'.

He discusses the strategies used by a group at Deakin University to move toward establishing symmetrical communications in course teams. In essence, the group used video recordings to assist in reflecting critically on its meetings. Patterns of interactions, rules, prodecures, etc, were identified which affected the imposition or elimination of hierarchies, small-group politics, etc. Clearly, through identifying and thinking about the features, rules and beliefs behind course team practice, especially those concerning the relationships between consultants and course team members, and by assuming a commitment to symmetrical communication, moves toward symmetry may be made.

However, unlike the circumstances of Kemmis's group, the implication of my previous discussion in this paper is that there is rarely a commitment to symmetry in the course team process. Indeed, contemporary Distance Education practice militates against it. It is my view that the nature of the relationship between the Distance Education consultant and the course team is such that symmetry is practically impossible. The separation of curricula and pedagogies, the attendant public and private divisions, the isolation of teachers from students, and the domination of text, all contrive to ensure that asymmetry is maintained. Therefore, the very notion of Distance Education consultancy is founded on the asymmetrical nature of the structures of distance teaching. Hence, consultants can only ever 'fiddle' with the tomes.

The structures of Distance Education need reconstructing to reduce their asymmetrical pressures. However, as these structures engage with and reflect the broader social structural features of society, any changes towards symmetry in the processes of Distance Education will be shaped by the broader social conditions. Bernstein (1977) argues that,

> 'the selective organisation, transmission and evaluation of knowledge is intimately bound up with patterns of authority and control. The battle over curricula is also a conflict between different conceptions of social order ...'

I would argue that, in Distance Education, a 'victim' of the 'battle' is pedagogy and, hence, so is the Distance Education consultant. To begin the process of changing the structures of Distance Education a critical evaluation of text would be useful. Such an evaluation should include an explication of the forms of pedagogy embedded in existing text and an analysis of the forms which are possible in relation to the specific curricula involved. The institutional structures which operate to shape and control the distance teaching process as a text production process need to be questioned. Other structures should be proposed which encourage distance teachers to use any available media to teach their curricula in the best ways possible. Such ways should be those which lead distance students to be engaged actively in their own learning, either individually or collaboratively. The distance learning process should contribute to the students' emancipation from, rather than entrapment within, an ossified print curriculum. This means ensuring that a dialogue exists between students and their teachers, which tomes usually prevent by solidifying the already asymmetrical student-teacher relationships.

It seems likely that if distance teachers consider the pedagogy and curricula of their courses in terms of dialogue then they will necessarily reflect critically on such curricula and pedagogy and, in so doing, remove or modify their needs for Distance Education consultancy. Because the Distance Education consultant's pedagogical work would become of similar importance to the curriculum development process and, therefore, be interrelated with and inseparable from course team work in general, the position of consultant would become superfluous.

I have concentrated on tomes in this chapter. However, there are other issues to consider and obstacles to overcome before symmetry can be achieved in distance teaching. Such symmetry is an ideal which should be extended beyond the course team and institutional structures through the curricula and pedagogies to the students. In this way, what Forster, King and Luke (1980) call 'the emancipatory nature of good distance practice' can be realised; otherwise we are destined to continue forever 'fiddling while the tome turns'.

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CHAPTER 8

'Take Me To Your...': The Instructional Designer As A Leader

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Preamble

When responding to a draft of this chapter, the editor asked for clarification of the terms Instructional Designer and Educational Developer as one of the aims of this book is to heighten the debate on the nature of their roles in Distance Education.

As you can see from the above, my title within the Hong Kong Polytechnic is Program Development Officer. In our unit, there are others with the title Curriculum Development Officer, as well as staff known as Instructional Development Officers and Audio Visual Officers. Collectively, we are classified by the administration as Educational Technology Officers (with levels from Assistant through to Principal , these being academic equivalent posts which equate with the hierarchy of Assistant Lecturer through to Principal Lecturer.

I strongly suspect that many readers of this book belong to institutions with similar jumbles of jobs and titles. This confusion is not confined to nomenclature within the institutions - reading the relevant literature does not produce consensus on definitions and terms. It has certainly become a matter of debate, and a few contributions, such as those of Reigeluth (1983) and Richey (1986) even though they do not agree, do make valiant attempts to categorise and define roles, and introduce a measure of clarity to the deliberations.

I like to be called an Instructional Designer, because of the active and creative role implicit in the word 'design'. Educational Developer seems to me to have an undesirable administrative ring to it. Hence, Instructional Designer or 'ID' has been used in this chapter. However, the focus of this chapter is leadership, so let us change the subject and consider the notion of the instructional designer as a leader.

Introduction

It may not be readily apparent that an instructional designer (ID) can be a leader. Consider, however, the leader as:

> ".... the individual in the group given the task of directing and coordinating relevant group activities or who, in the absence of a designated leader, carries the primary responsibility for performing these functions in the group" (Fiedler 1967).

I have chosen the above definition because:

- I agree with it,
- it corresponds to the leadership position which IDs are sometimes forced to take, and
- it was written by Fred Fiedler, whose model of leadership is explored and applied to IDs in this chapter.

In contexts and locations that I have observed, IDs can find themselves in what might be termed 'de facto' leadership positions, in line with the second part of the definition. For instance, IDs often take the lead when working with individuals or small groups in instructional development. This is because they usually have the greatest knowledge of the process itself. Thus the ID, as a leader, guides the academic staff through the development and production of learning materials. During this process, the ID is not necessarily given any formal recognition as leader, and in fact can be considerably lower than other team members in the hierarchy within the institution. This can be a stressful situation, for both the ID and the academic staff. This potential tension is further compounded by the nature of the task facing the development team. Despite the proliferation of 'how to do it' texts on instructional design and development, it remains an elusive job to tie down to strict procedures.

Based on these observations, I have carried out a small study of IDs in Australia and Hong Kong, using instruments developed by Fiedler. It was my hope that such a study would provide a different focus for examining the work of IDs, and might produce some fresh insights into their roles and responsibilities.

An Illustration

Picture yourself in the following situation:

You are an ID. You enjoy working with others, and take particular pride in the fact that you can get along with practically anyone. Currently, you are working with a small team of authors/lecturers, developing Distance Education materials. The standard instructional development procedures of your institution have recently been modified, 'tightening up' some of the areas in which problems have arisen in the past. In line with these new procedures, you have been given more authority than usual, to enable you to make decisions quickly and keep the development process moving as smoothly as possible. Further, now that the team is meeting, everything seems to have fallen into place. Team members are getting on well, there is little dissension and meetings progress quickly and efficiently.

However, something is wrong. Although the learning materials are being submitted regularly, their quality is very poor. You know the team members well, and are fully aware that they are capable of far better work. Everything seems to be running smoothly, yet the outcome of the process is sadly inferior. What do you do?

We will return to this example later in the chapter, after we have examined some theory and looked at the results of the study.

Background

The study of leaders and leadership is well-developed, both in management theory in general and in educational administration in particular. The early approach was to study great leaders, to ascertain what they had that others did not. This has given way, after failure to establish systematic relations between personal traits and leadership, to the now dominant contingency view. This view is summarised by Owens, who says,

> "Contingency views of leadership hold, briefly, that although there is no one best, universally applicable way to lead, there are describable situational contingencies that call for different specific leadership styles and methods" (Owens1981).

In other words, the nature of leadership positions varies from situation to situation, different situations calling for different styles of leadership. Situational variables that have been considered in the study of group leadership include:

- the characteristics of the group,
- the nature of the group's task, and
- the psychological environment in which leadership is attempted.

Researchers and theorists have tried to ascertain which variables have the most impact on an individual's ability to lead effectively.

Of the available theories, I based my study on Fiedler's. It has a long history of development, and is well researched and validated. A meta-analysis of research studies on the model (Strube and Garcia 1981) concluded that the model is 'extremely robust'.

Fiedler's Contingency Theory of Leadership

Fiedler recognizes that different styles of leadership suit different situations - hence the 'it depends', or contingency approach. His theory proposes that group performance is a function of leadership style and situational variables. We cannot change our leadership style: it is fixed, according to our innate disposition and psychological makeup. The situational variables can, however, be manipulated, enabling us to change the contingencies of our position to improve the favourableness of our leadership situation. This theoretical concept was succintly summarised in the title of one of Fiedler's early articles, 'Engineer the Job to Fit the Manager' (Fiedler 1965). In line with his theory, Fiedler and his co-workers have produced a set of questionnaires which measure both leadership style and situational variables. If our leadership style does not 'match' our situational variables, we are advised to change the variables.

Fiedler maintains that leaders are either task-oriented or relationship oriented by nature. The tendency to be either one or the other is measured by the rather ingenious LPC (Least Preferred Co-worker) scale, which uses an Osgood Semantic Differential format. To use the scale, Fiedler asks us to think of the one person in our lIVES whom we have found the most difficulty working with, and then to describe this person on each of sixteen dimensions. For example, we are asked to rate the extent to which our LPC is either 'distant' or 'close, and how much he/she is either 'open' or 'guarded'. Task-oriented leaders describe their LPC in a negative sense. Fielder allows an intermediate category, which will be explained more appropriately later.

Fiedler describes the qualities of the two types of leader as follows:

> "High LPC leaders get their major satisfaction from good personal relations with others. In fact, they need good relations in order to feel at ease with themselves. Their self-esteem depends much on how other people regard them and relate to them. As a result, high LPC people are very concerned about what others think and sensitive to what their group members feel. In a work setting relationship-motivated leaders encourage group members to participate and to offer different ideas. They do not usually get upset when things are complicated and they like creative problem solving situations.
>
> Task-motivated (low LPC) people find their main satisfaction in getting things done. They gain more self-esteem from achievement than from the opinions of others. They feel most comfortable working from clear guidelines and standard operating procedures. If these guidelines are missing, the low LPC leader will try to create them" (Fiedler 1977).

Three situational variables are identified in the theory. In order of importance they are 'leader-member relations', which is scored as twice as important as 'task structure', which in turn is twice as important as the 'position power' of the leader. Scales are provided to measure each of the variables. The score for task structure is modified according to the experience and training of the leader - what may seem a well structured task to an experienced expert may seem unstructured to an inexperienced novice. The sum of the scores for the three situational variables is a measure of the 'situational control' of the leadership position, which is classified as low, moderate or high.

In essence, Fiedler's theory predicts that task-oriented leaders (those with low LPC scores) will perform better in situations with high or low control, while relationship-oriented leaders will be more effective in situations with moderate control.

Intuitively, this seems to make sense. A situation with high control, such as that of the captain of a ship or an officer in the army, demands a task-oriented style of leadership. Further, in a situation of low control, a relationship-oriented leader may precipitate dissension and lack of direction in the group. However, in a situation of moderate control, such as may exist in a research team, a task-oriented leader is unlikely to get the best out of the team members. If no consideration is given to the ideas of members, and their feelings are ignored, the team is unlikely to be effective.

The Study

Fiedler's questionnaire was sent to IDs at the Darling Downs Institute of Advanced Education, the Tasmanian State Institute of Technology and the Warrnambool Institute of Advanced Education in Australia, and the Hong Kong Polytechnic. All of the Australian IDs work in Distance Education, while the IDs in Hong Kong either work in Distance Education or are involved in the development of self-study materials.

Together with the questionnaire, each respondent was sent a letter of explanation, which informed him/her why I was undertaking the study. The questionnaires were unchanged from those developed by Fiedler, but some of the management-related terms used were clarified.

All 16 returns were usable. The results are shown in Table 1, and have been ordered according to LPC Score, from lowest to highest. The right hand column (situational control) is the sum of the three situational variables (leader-member relations, task structure and position power), shown in the middle columns.

Results in Order of LPC Score

The left-hand column shows the LPC scores of the 16 respondents. Nine people were classified as task-motivated, one person fell in the 'intermediate' range (57-64), while the remaining six respondents were high LPC, representing relationship-motivated leaders.

LPC Score <57 low >64 high	L/M <20 poor 20-30 mod >30 good	Task Struct <7 low 7-13 med >13 high	Power <4 low 4-6 mod >6 high	Sit Control >30 low 30-50 mod >50 high
17	29	1	3	33
29	20	3	3	26
36	19	16	3	38
40	30	4	5	39
50	19	5	2	26
51	28	3	3	34
52	40	11	7	58
56	29	4	2	35
56	32	11	3	46
61	33	12	9	54
67	27	6	4	37
75	28	4	2	34
75	30	6	7	43
84	29	5	1	35
94	25	8	4	37
100	28	10	5	43

Table 1

Fiedler describes the intermediate LPC leader as:

"...cognitively more complex, less authoritarian or acquiescent, less concerned with socially desirable responses, and more critical and task-oriented than either the high or low LPC person. He seems also tobe somewhat more concerned with personal warmth and industriousness in the selection of his work partners, hence less interested in team work" (Fiedler 1967).

The situational variables confirmed what I suspected about the leadership role - the ID's position power is quite weak (nine respondents recorded 'low'). As an aside, it was interesting to note that the three people who indicated 'high' for position power represented all categories of LPC score (low, intermediate and high). Also confirming my earlier suspicions, most people indicated that the task of designing learning materials is quite unstructured (10 respondents recorded 'low'). For the most part, leader-member relations were given as moderate (representing nine respondents), with only two people reporting low for this variable. Thus, most IDs would claim to have reasonably good working relations with academic staff.

Combining the situational variables into a measure of the job's situational control, we find that most totals fall in the 'moderate' zone (12 in all), with two scoring 'low' and two scoring 'high'.

For a situation of moderate control, Fiedler predicts that a relationship-motivated person will make the better leader. Using his predictions, the results of the survey indicate that at least nine of the respondents are 'matched' to their leadership situation (I say 'at least' as it is not clear whether the intermediate LPC person is matched or not). Of the nine, seven are relationship-motivated leaders matched to their situation of moderate control, and two are task-motivated leaders matched to their low control situations.

Discussion

The purpose of the above is not to provide some data so that I can write back to the respondents (their replies were anonymous anyway,) and tell them whether they are in the right job or not. Further, I would not suggest that all ID jobs have moderate situational control, and would not support the idea of testing applicants for ID's positions with the LPC scale to establish whether they fit the job. Rather, the results illustrate how Fiedler's instruments are used, and reveal aspects of the ID's position in a development team. Further, it can be illuminating to discuss the leadership position of ID's in the light of Fiedler's theory.

In our work as IDs in Distance Education, we are usually aware of how well the instructional development process is going. Although none of us is ever likely to be perfectly satisfied with the product, we know whether we are producing quality learning materials or not. There are times when we have a nagging sense that all is not going as well as it might, but are not able to put our finger on the crux of the problem. Fiedler gives some ideas as to how we might improve the situation.

Accepting that our style of leadership is fixed, we can examine the situational variables and see if one of them can be changed to make the situation more favourable. Do not forget that the variables can be changed in both directions. In other words, leader-member relations can be weakened as well as strengthened, the task can be made more unstructured as well as more structured, and position power can be reduced as well as increased.

So, let us get back to the example that I introduced at the start of the chapter. Remember, you are an ID whose group seems to be working efficiently, but is producing work which is far from satisfactory. What can be done to improve the situation, in the light of the discussion within this chapter?

It would seem from the details of the case that you are a relationship motivated (high LPC) leader, working in a situation of high control (leader/member relations are good, task structure is medium/high and position power is moderate/high). Fiedler would suggest that the amount of situational control needs reducing from high to moderate. However, only a detailed knowledge of the situation will reveal which of the situational variables requires adjustment.

For example, leader-member relations may be so relaxed that individuals do not feel inclined to criticise each other's product. The academics might be getting on so well with you that they do not feel the need to make the extra effort to produce an excellent product. Sizing up the situation, you may decide to weaken leader-member relations by withdrawing gradually from the group - the uncertainty that this produces may encourage the team members to put extra effort into their contributions. Alternatively, you may reason that the instructional development process has been too 'tightly' structured, restricting the creativity of the academics. Hence, the guidelines and procedures may be relaxed a little (thus lowering the task structure variable), allowing the writers more freedom in their efforts. Less importantly, and also less likely, you may have too much power within the group, dominating its work so that team members do not feel inclined to give of their best. A reduction of your power, such as greater sharing of decision-making, might then be the best path to follow. In Fiedler's theoretical terms, any of the above three actions will reduce the amount of situational control of the leader, and hence can place you in a more favourable leadership situation.

Notice from the above example that although Fiedler's theory is prescriptive, it is still the contingencies of the situation that determine how to modify a leadership position. The theory prescribes a range of possibilities, and it is up to someone close to the leadership role to determine what course of action will be most effective.

Limitations

This chapter represents a 'neo-scientific management' approach to the study of the role of the ID in Distance Education. Its focus is limited to the factors addressed by Fiedler in his theory of leadership. Other factors are taken into account in alternative contingency views, which can reveal other aspects of the job. For example, Vroom and Yetton (1973) try to specify how leaders ought to behave in order to be effective, given specific contingencies. They focus on participation in decision-making, in line with which they have produced a decision-process flowchart, which diagnoses the situational contingencies of a particular decision faced by a leader. Other useful theories include Reddin's (1970) 3-D Theory of Leadership, and Hersey and Blanchard's (1977) Situational Theory of Leadership, which addresses the changing maturity level of a group, a factor not accounted for by Fiedler.

There are, of course, totally different approaches, exemplified by the contributions within this book. 'Naturalistic' study, used in the ID area by Shrock (1985), has grown in popularity and credibility in the past few years, adding new ideas to the literature on the subject. I would stress that the neo-scientific management and naturalistic approaches should not be seen as rivals, but as complements, each with its own opportunities and restrictions. Any debate about their relative merits should take account of this.

Another limitation is the size and scope of the study. With 16 respondents, from a small number of institutions, it is difficult to make sweeping generalisations from the results.

Finally, there is the basic assumption about the ID as a leader. Some IDs work in teams where another person has definitely been assigned to head the group, so that the analysis has little meaning for them.

Conclusion

I have argued that the ID can be viewed as a leader in the instructional development process. This assumption prompted the use of Fiedler's Contingency Theory of Leadership to study the role of a number of IDs in Australia and Hong Kong.

The results of the study indicate that the IDs in the sample generally work in leadership positions of moderate control, with reasonably good leader/member relations, a relatively unstructured task and quite low position power.

The value of the study for IDs is that it provides us with a new way of looking at our role, and new ways to analyse the delicate, difficult and demanding job of instruction development.

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PART THREE

Working through Development Issues, to seek sense out of practice

Working With Writers

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My ideas on course development evolved through practice. Twenty years ago when I started editing correspondence courses my brief was to collect lessons from the authors and prepare them for print. That was for the infant National Extension College, then operating on a shoestring, and relying on part-time editors like me. I found I needed to discuss the lessons with writers, develop the activities so that they were more suitable for distance learners, edit and organise the text, and oversee the design and production: all these activities were necessary in order to produce a text with which I was satisfied.

It was only after I had been editing like this for some time that I began to discover that there were other approaches, ranging from teams with fully shared responsibilities to institutions which practised strict division of labour for each stage of production, with the editor perhaps only seeing the text at a later stage. In my institution, the person called Editor was in charge of course development, while in others the role of the editor was often restricted to working on the text after the writer's task was complete. Other institutions use terms like Course Developer, Instructional Designer and even Edcational Technologist to cover functions which I perceived as part of editing. In recent years I have worked with and in many distance teaching institutions, and have experienced several of these different approaches to course development and production. I remain committed to my original concept of course development: one person should be responsible for steering a course through all stages of development, from idea to delivery to learners. He or she is primarily concerned with the development of the materials and the quality of text, but is also concerned with curriculum content, teaching methods and quality of presentation. The most suitable name for this person is, I believe, Editor.

An editor may have a wide range of responsibilities, but does not necessarily have to do everything. In a very small unit an editor may be a jack of all trades, as I found I had to be in the early days at NEC. More often, however, the editor will need to coordinate and manage the whole process of course production, working closely with writers and also with, for example, language editors and educational technologists.

Why do I choose the editor to manage course development? Above all, the editor looks after the interests of the future learners throughout the process of development and production. The editor is concerned that the materials that are eventually distributed to students will be suitable for learning. A good editor is familiar with the kinds of students the institution serves and knows their needs; he or she is experienced in designing and developing materials for Distance Education, and can match teaching methods to student needs. Writers and graphic designers will, of course, contribute a great deal to course design, but they often have their own preoccupations, while the editor can only operate effectively with the student in mind. Since the editor's work has this central concern, he or she is well-placed to coordinate the whole process.

Much of my work at the International Extension College is concerned with staff training and advising on course development, working with distance educators from Africa, Asia and Britain. It is interesting to see how different institutions organise editing, and how far my ideas can be applied in organisations with various administrative structures. I will focus on a few matters which often cause difficulty.

First, there is the question of organising teams. It has become conventional wisdom in Distance Education to distinguish two main approaches to course production. One is the course team, with writers, media producers, editor, instructional designer and graphic designer all planning and developing materials together. This approach was invented by The Open University in the U.K. and relies on the majority of team members being full-time faculty, or otherwise easily accessible. The other more traditional approach is the partnership of writer and editor, where the editor advises the writer on instructional design and if necessary converts draft lessons to a suitable format for Distance Education. This approach is more favoured by institutions that use part-time staff as writers.

In practice, many institutions use a pattern somewhere between these two extremes. Two or three writers may be involved in a course, and a good editor will arrange for them all to meet, and also arrange contact with course advisers (i.e. subject specialists), producers and graphic designers. A loosely organised course team thus comes into existence. I suspect that most organisations that claim to use The Open University-style course teams actually have groups such as I have just described.

It is, I believe, beneficial to have several people involved in course development. But it is important to define the role of each individual clearly. If there are several writers, exactly what responsibility does each have? If there is a specialist course adviser, what is he or she to do? Very often these matters are left vague, and inefficiency, conflict and delays result. A writer may resent the editor's comments, or a course adviser may try to take over the writer's job. Each member of the team needs a clear job description, and his/her work must be tied to a schedule.

It does not matter too much how the team is organised, provided that each member's responsibilities are clear. One institution may organise teams differently for different courses. The editor is often involved in developing the various job descriptions, and is probably the best person to brief individual team members on their responsibilities and organise a detailed production schedule. The importance of these matters is often seriously underestimated.

A second area that presents difficulty is course planning. Let me start by clarifying what I mean by a course. I consider it to be a sequence of modules or units, where each unit may be composed of print and other teaching media and where provision for the student to receive feedback on learning, whether face-to-face, by correspondence, or by other means, is in-built. Course planning may involve creating a syllabus. It always involves arranging the syllabus and selecting topics so that the order and content are suitable for distance learners; and it involves planning media use and support services to suit the subject and the students.

Problems arise when an institution is preparing courses for existing syllabuses. A university may start an external degree program where students follow the same syllabuses as internal students, or a college may produce courses for adults to complete secondary-level examinations. All too often, particularly when an institution is new to the business, it is assumed that syllabus is the same as course outline, and units are planned to follow the topics in the order given in the printed syllabus.

Of course, this is nonsense, and writers soon realise, for example, that certain topics are the foundations and should be taught first. Unfortunately, by the time they realise this, the time for planning is supposed to be over, and any return to it will leave less time for writing. As a facilitator at writing workshops, I have often experienced frustration to find that a request to plan courses prior to the workshop has been interpreted as photocopying the syllabus. I have learnt to emphasise and explain planning more thoroughly: I think that experienced practitioners are partly to blame for this weakness, as we have not emphasised it enough in the past.

I have also found that poor appreciation of the potential of different media is widespread. Those new to Distance Education tend to think only in terms of print; those with little money consider everything but print is out of reach. The result is lack of imagination, lip-service to audio ("we'll make some accompanying tapes next year") and ritual yearning for video ("of course we would have television programs if we could afford it"). The concept of planning media use according to resources available and students' needs has not been widely understood, and the idea that media can be integrated for education is rare. Again, once decisions have been made on a course plan and a production schedule, there is little that can be done.

Even if proper planning takes place another barrier to good course design lies with the academics. Many university lecturers new to Distance Education have difficulty in accepting that learning is related to the development of skills, and is brought about by student activities. All too often they see teaching as imparting knowledge rather than facilitating learning. In the university lecture hall they may get away with this; in Distance Education it will not pass muster. University teachers often find change to a learner-centred approach particularly difficult; schoolteachers and trainers who may develop lower level or professional courses tend to have a more practical orientation, and are ready to see a role for projects or group activities as components of the course.

This last point leads to a discussion of problems with the development of writing skills. Today, those new to Distance Education readily accept that they need some kind of orientation and training, and often the editor will lead that training. New writers everywhere appear to encounter the same difficulties. A major one is design of student activities, perceiving when activities are needed and getting ideas for presenting activities. Some institutions leave it to editors to design activities after the writer has drafted the texts: I believe this is, in most cases, a false economy. With prompting and models to copy, writers can usually devise suitable activities.

Another difficulty concerns the formulation of objectives. A few years ago, few people were familiar with the idea of educational objectives. It was often a hard task to persuade people they were necessary and only then could you train writers to formulate them. Now objectives are common currency and most people think they know what they are. Unfortunately, misconceptions are widespread, and it requires tact and patience to persuade an eminent academic that a list of topics is not a list of educational objectives.

Then there is the matter of selecting and organising content. Few people, when asked to select examples that are relevant to the students, grasp immediately what is wanted. An editor has to be ready to suggest and compare alternative examples, to awaken writers to students' needs and experience. Also a teacher used to following the dictates of a clock in class finds it difficult to see the need for dividing teaching material up into different sections, and may not see easily how to do it.

Finally, there is the matter of language. Few people can write clearly at first try, but even fewer realise this. It is a shock to new writers to discover that their words when written down are not easily followed. At the same time, most teachers can learn to write acceptable teaching texts. It is a difficult task to help a writer to become self-critical and at the same time to develop skill and confidence as a writer.

It is fairly easy to draw up an agenda for training writers. But how should the training take place? I have two preferred methods and the editor is the key person in both. The first method involves editor and writer working in close partnership on the development of the first unit or section of a unit.

The editor uses the writer's first draft to develop a model unit, which the writer then copies for subsequent units. This is a powerful method of training, and reduces the editing load later. The second method is more suitable for groups of writers, and involves short training sessions before writing starts. Part of the training should include a critical examination of course material from the writer's own or other institutions, which can serve as a model before the writer has had a chance to develop his or her own material.

In some circumstances it is useful to cut training short and use a meeting of writers as a production workshop. In a few days, drafts of several units can be written; but the editor will have a great deal of work to do afterwards, as the writers will not have grasped all the techniques necessary for effective writing.

Training, however brief, brings ample returns in the quality of materials, and is undoubtedly cost effective in that it reduces the time needed for editing and rewriting of texts. But it cannot eradicate all problems. There is a set of particularly intractable and, unfortunately, common difficulties that arise in institutions which contract part-time writers. Newcomers to writing, as I have said above, are generally unaware until too late of the need to plan carefully. They are also usually surprised to find how demanding and lengthy the job is. The need to rewrite and revise texts comes as a shock. These difficulties are often accentuated by low fees: distance education institutions are frequently under-resourced and forced to pay little for the job, with the result that writers get demoralised.

Such constraints mean the editor needs skills of diplomacy, to calm and encourage disillusioned writers, and an ability to make quick decisions as to what quality of course material is acceptable.

I believe this presentation has given a convincing case for the editor as controller of production. It may also have suggested that good editors are hard to come by. Too little attention is paid to training of editors. I have tried to remedy this in my manual, *Course Development* (1987), which provides advice on administration and organisation, gives practice in editing techniques, and includes activities intended to develop confidence in interpersonal skills. I developed the manual from training experience, and have been asked to help with training editors quite often recently: but not enough, given the extent of the need. It still awaits full recognition.

Finally, I have come across a mode of course production which I think overcomes some of our difficulties and reduces the burden on editors. It depends on three workshops, each of several days: one is for course planning, the second for writing, the third for editing. The same core group of people comes together for each workshop, perhaps with one or two specialist facilitators at each. In the first, everyone is a course designer; in the second everyone is a writer; in the third all are editors. Writing can and should continue between workshops. This approach differs from the traditional team approach, in that team members change roles with each workshop.

I have taken part in this process two or three times now, and it seems to be efficient, and ensures rapid controlled writing and editing and reasonable quality materials. Workshops need artists and typists in attendance, the organisation is quite demanding, and the running costs can be high. It is, however, a method of production that deserves more attention.

In conclusion, my preoccupations are with organisation and practicalities. I believe that strong control of course development is vital, and that one person, whom I call editor, should do this. An editor must have a good grasp of communication theory and the principles of Distance Education, but must also be flexible, decisive and well-organised.

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CHAPTER 10

"There's Many a Slip ..."
Slippage in Curriculum Development

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Abstract

I wish to examine some of the ways that curriculum outcomes can "slip" from the intention of those designing the curriculum. This examination is based on my experiences at The Open University in the United Kingdom and subsequently at Griffith University. The types of "slippage" discussed are mainly at the general curriculum level. The role of educational developers at this level of the process is also discussed.

Background

Distance Education changed significantly in early January 1971. That was when The Open University first started teaching. Quite apart from the direct impact that it had on the establishment and redesign of other Distance Education systems, from that date most Distance Education would be judged against the achievement of The Open University. It probably was not so much that The Open University did particularly new things but that it combined a number of fairly new education developments in one massively funded large institution dedicated solely to Distance Education. Not only that, but surprisingly, it did this within an educational environment that was probably one of the most elite in the world at that stage. I will attempt to trace one thread of my own experience as an academic developer from the period when I joined The Open University, some fifteen months before that January, to the present. The thread that I am trying to follow here is, of course, interwoven with many others, not only of my own, and it may well be that I have occasionally slipped from one to another.

Bob Ross

My own direct experience of university Distance Education in fact predates my period at The Open University by some twelve years, but it is still appropriate to start this story from late 1969 when the first academic teams that were to produce The Open University material were assembled. Since the publication of the first book *The Open University Opens* (Turnstall 1973) about The Open University an enormous amount has been written about, and from, that institution. A good bit of the latter material appears in the publication *Teaching at a Distance* - now transformed into *Open Learning*. I suppose the only justification for my adding to that enormous literature is that this is my first contribution and (more significantly I hope) that the particular thread that I will follow has not been covered in this way before. I have labelled my experience as academic development, but the way in which that term fits my experience has itself changed considerably over the succeeding eighteen years. In particular my involvement has changed from a writer of materials in the early period, through advising others, to participation at a more abstract level now.

Some years ago, in discussing the first draft of the Johnson report about academic development units (Johnson 1982), I had an argument with my colleagues from the University of Melbourne. They had presented the view that if their activities were successful they would work themselves out of a job. This was a view of academic development that I had heard many times before, but which I categorically reject. I do not propose to take that issue further here and only tell the story because of a parallel with the view of the planning committee for The Open University. This committee had recognised that the early staff of the University would be working with a new educational system but had seen the development of the system as a short term activity at the start of academic planning. As a consequence the University engaged a firm of educational consultants to design its system. Within a quite short period all the consultants were permanent employees of The Open University and the University had started to establish its Institute fór Educational Technology, which probably still constitutes one of the largest groups of educational developers that exists. It is interesting that the first course production schedule used in The Open University was developed by the leader of this consultant group along with the Dean of Science, who could probably have been accurately described as a fundamental particle engineer. For my present purposes it is more significant that The Open University teaching system was developed, or evolved, within the teaching teams of the University, rather than being developed for them by the consultants (or educational developers).

Given the period in which the system was being developed, it is not surprising that the behavioural objectives movement, largely based in the United States, had quite a significant influence on The Open University. Hence the emphasis in the early materials on listing assumed entry behaviour and aims and objectives, and the emphasis on linking self assessment questions and assessment items to the aims and objectives. In addition, the structuring of the text and inclusion of in-text questions (attempting to encourage students to stop their reading and think through the material they were working on), as well as the prominence throughout of various forms of "signpost" to inform students of the purpose of the different parts of the package, are indicators of the general approach adopted by the University. In this respect it was quite interesting, if a little disillusioning, to meet the attitude among a few writers of distance education materials in China, early in 1986, that telling students what was expected of them enabled them to prepare for the exams, and this was tantamount to cheating!

One of the achievements of The Open University was the development of interdisciplinary foundation courses in each faculty. A further contribution was the use of curriculum development teams comprising lecturing staff from the various disciplines, along with educational developers and television and radio producers; somewhat later, course assistants and editors were added. One of the tasks that a team producing an interdisciplinary course has to face is that of choosing an organising principle for the course. This principle is then used to generate a structure around which the content of the course is arranged. It is around this issue that I have chosen to hang this story.

Course Structures

One of my more interesting tasks when I first joined The Open University was to read the proposals for the organising principle that had been suggested by various potential members of the Science Foundation

Course team. One of the fascinating features of these proposals was that you could identify the discipline of the proposer merely by reading the proposal. For example proposals that used as the organising principle the nature of physics as the fundamental science discipline, came from the physicists. Similarly the earth scientists saw their discipline supplying the organising principle because science was an activity carried out on the earth. The biologists saw science as an activity of biological beings and therefore their discipline was the basis of their organising principle.

There are quite a large number of structures that can be used for combining a number of disciplines in a given course and I have outlined some of these elsewhere (Ross et al 1985). The group I was working in adopted what we called the Pentz spiral, named after the Dean who proposed the structure. This is shown schematically in Figure 1. The idea was that each block of material from one discipline, would lead into the block from the next discipline, but the whole sequence would be repeated. The second block of physics, say, would build on the first block of physics but would also be led into from the last block of earth science and would link to the next block of chemistry.

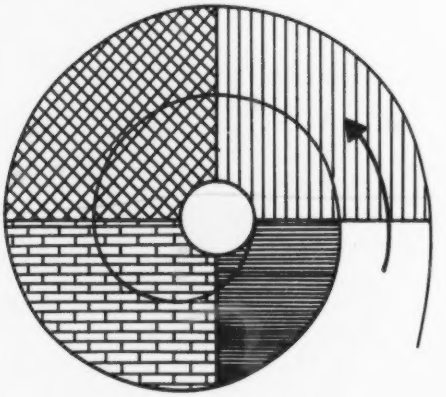

Figure. 1

From this structure the development of the whole course was first defined and then the purpose of, and links between the blocks were made quite explicit. This led to the definition of the content of each block and the development within the block.

In this story I am going to deal with general issues, but where I become specific I will mainly be dealing with development of the text. However, you should remember that at The Open University the package also contained television and radio programs and home experiment kits, and that all parts of the package were integrated . The choice of the material that was to be shown on television played an important role quite early in the discussion of the content of each block. Frequently this choice was made earlier than was desirable because of the scheduling requirements for production of the television programs.

The procedure that the team uses for its activity has a significant effect on the final product and, as we will see later, even the way the team documents its activity is important.

Once the general development of the course had been agreed, each block was allocated to individual members of the team for further development. Ideally, with this structure one would like to develop the blocks in sequence. Unfortunately this would mean that only one individual or group on the team could be working at any one time. Production scheduling made this unacceptable. This meant that the definition of each block and the relationship between the blocks, became of critical importance.

Once the blocks had been allocated, each group or individual was required to produce an expanded version of the block but still at a fairly general level. At this "stage 1" level all the blocks were related together and the whole course was able to be viewed as a unit. After adjustments to these first documents the blocks were then developed into a "stage 2" in much greater detail. It is at this detailed stage that serious slippage can first start to occur.

The temptation is for each individual to structure the content of the block more in relation to a traditional disciplinary development than to the particular requirements of the course. One result is a tendency to expand the amount of material in the block, on the justification that such material is necessary for the development of the subject. It is one of the team's responsibilities to try to prevent unnecessary expansion of the material. However, it is obvious that this can result in conflict between the subject expertise of the individual and the collective role of the team.

In the early stage of production the first detailed statements (stage 2) received considerable comment from the team, and were revised on the basis of that comment. The revised version was also subject to team scrutiny, mainly to see whether earlier comments had been incorporated. A final version was also discussed by the team but largely for technical production comments.

Difficulties in keeping to schedule almost inevitably meant that later blocks coming before the team received rather less comment than those that were discussed earlier. This was less of a problem than it could have been, because of the collective learning of the whole team.

Role of the Educational Developer

As this story is supposed to be about educational development I should at least briefly discuss that role.

An important task during the first development of the blocks is to specify the relationship between the blocks and the role that each block plays. The educational developer can help the members of the team find terms in which to express these purposes and relationships, so that they are useful to the team as a whole. The educational developer can also join in the discussion of the links and purposes of the blocks and by careful probing help writers to clarify these. At later stages of the development the educational developer can help individual members of the team to find ways of defining the content of each block.

The educational developer also encourages and helps the team to define assumed entry behaviour and, particularly for early courses, can help the team to identify undefined terms and concepts. The educational developer can also play an important role in looking for constructions that are unnecessarily complex, for material that is difficult to follow, and for places where it might be appropriate for student activity or in-text questions to be inserted. Of course these are responsibilities of all the members of the team, but the educational developer should have particular expertise and interest in these matters.

This discussion of the role of the educational developer raises the question of the importance or otherwise of academic background knowledge. There are both advantages and disadvantages in the educational developer having some expertise in one of the content areas in such a course, but this is not one of the main interests of this story.

Slippage

This story is about slippage and I have referred to one cause of slippage above. Slippage occurs if an individual writer, in developing the material for a block, develops it as if it were in a traditional disciplinary program. Frequently additional material, that is not necessary for this particular course, becomes included. Material can also be included for which prerequisite knowledge has not been covered elsewhere in the program. This can occur to a greater extent if, in developing the material, the link to the previous material is ignored or poorly made. Similarly, it is possible for the block to be developed in such a way that it does not cover material that is going to be assumed in subsequent blocks. It is of course one of the functions of the team, and in particular of the educational developer, to try to be conscious of such slippage and to draw the attention of the writer to the problem if it does arise, and to try and ensure that the deficiency is corrected. But in the circumstances referred to above, when the team is under deadline pressure, some of this type of slippage can be missed.

Another way in which this slippage can occur, even though the team has scrutinised the material, is if the staff member concerned maintains the material that has been inserted is necessary for the development of the block. This can leave the other members of the team in the position of either having to allow the slippage to occur or to challenge the expertise of the writer. This is a particularly difficult task for the educational developer.

Occasionally, a team will decide that it either does not have the expertise, or does not have sufficient personnel, to produce all the blocks for the course. One response to this is to "contract out" a block or part of a block. In the majority of cases where I have seen this strategy adopted it has not been very successful. In most of the cases the material that has been produced on a contract has not been satisfactory and in some of them has not been used at all. Either that block is dropped from the course or it has to be "scrambled through" at the last minute by members of the team. In other cases where the contracted material has been used it is quite clear that it is not satisfactory and slippage of the type described above occurs to a major extent. In all of the cases I have been aware of, the team has been conscious that this is a potential problem and has gone to considerable trouble to describe to the person or persons to whom the contract is let, exactly what is required. None-the-less it seems to be very difficult to explain what the team has in mind to someone who has not been involved in the "negotiations" that lead to the course. Perhaps this is not surprising given the possibility, which frequently occurs, of some slippage with work performed by members of the team. This type of slippage is very common in the circumstances I will describe later in the story.

Slippage of the type I have been referring to can also occur when a block is being revised. This is particularly so when revisions are made by some person other than the original writer or at some time after the original material has been produced. In these cases, particularly where an isolated block is being revised, the need for careful links to preceding and succeeding material can often be missed. There will frequently be an absence of the control procedures that the original team used in monitoring the development of the course. Another example of slippage can occur in the structure illustrated in Figure 1. The material in each block is not only related to the material in the preceding and succeeding blocks but also is supposed to be linked to, and related to, the next block of the same discipline material (that occurs on the next sweep of the spiral).

I have identified three distinct types of slippage above:

- the inclusion of extraneous material,
- the inclusion of undefined terms and concepts, and
- the failure to make links adequately.

These types of slippage can be avoided if procedures are followed carefully; in particular if there is thorough checking of the concepts that are included against the aims of the block and thorough checking of the links between blocks. However, as indicated above, there are circumstances in which checking does not prevent slippage.

Another form of slippage can occur in the design of assessment items and this is, if anything, more distressing for students. It is obviously a greater danger when the assessment items are being designed by a group who were not members of the original team, or when they are designed a considerable time after the original material was produced. It is of course a real danger when assessment items are being devised in subsequent years to the initial production of the course. Again, careful checking can guard against such slippage, but frequently assessment items are being designed under a tight time schedule and checks do not occur adequately. At The Open University these checks became the responsibility of course assistants and course managers but they are clearly academic development roles.

A different form of slippage can occur as a result of insufficient early work on the structure of a course. Without thorough work at this stage the team can feel that the structure is fine, even exciting, but when the detailed work comes to be done, the links that were necessary within the course turn out not to be feasible. This can become obvious at far too late a stage in the development for anything to be done, and the problem can just be ignored, resulting in a disjointed course. It is hard sometimes to convince teams that they need to spend more time on the early planning, before they get down to what they regard as the "real work".

In a multi-component package, particularly a multi-media package, another form of slippage can occur. An example of this was obliquely referred to earlier, when I was talking about the need to decide the content of television programs in The Open University packages well before the rest of the package had been developed sufficiently. This, of course, is a more obvious danger when different people are responsible for the different parts of the package. So, for example, it is possible to have home experiments that do not integrate well with the text or the television program. Of course this is not an unusual occurrence in on-campus programs, particularly where laboratory work is concerned.

This form of slippage can have distressing consequences when part of the package consists of tutorial classes. It is quite usual for the tutors in such courses to be people who were not involved in the preparation of the original material. This can, in the extreme, result in tutors deliberately undermining the package, because they do not agree with the approach taken.

Problems of another sort that could be labelled slippage can occur when very strong assumptions are made about the ways in which students will use the package. At The Open University the various features of the learning materials were explicitly designed with a particular use in mind. It was also clear, from the materials themselves, that there were particular assumptions about the way students learn.

The Open University discovered, not surprisingly, that its students used the packages in a wide variety of ways. And it is also clear that students learn in a variety of ways. The fact that students use the package in different ways is not a major problem, unless the assumptions are built into the material so strongly that they really do require the students to use the package in the way that it was designed.

"Packaging" On-Campus Courses

So far I have been referring to experience from The Open University. I now wish to turn to subsequent experiences that I have had since I took up my present post in Australia. These experiences are of two rather different types although, as you will see later, they have started to converge.

One set of experiences continues to relate to Distance Education. Griffith University does not have a Distance Education program; these experiences arose from conducting workshops and seminars in other institutions and from attending conferences. However, my experience as an educational developer continued at Griffith, so the main part of the story now derives from an on-campus environment.

My experience with Distance Education programs in Australia arose largely from running workshops in regional colleges in the mid-70s. In that period the main task that Distance Education staff faced in these colleges was packaging, for Distance Education, programs that were already being run on campus, or were being designed to run on campus. As a result of my experience I devised a set of procedures for trying to help staff tackle this task with the aim of avoiding what can easily result in another form of slippage. (Ross et al1979) The issue, in fact, comprises a criticism of the fundamental assumptions behind what is called the "New England model" of Distance Education provision in Australia.

This is not the place to go into the reasons behind the development of the New England model. But, put crudely, the arguments behind the model go something like this:

> "we should give Distance Education students the same education as on-campus students, and guarantee the standards of our Distance Education programs by having students undergo the same assess ment procedure, including sitting for the same examinations."

While these arguments look superficially attractive, the major flaw is the assumption that packaging lectures delivered to on-campus students, and sending them to the Distance Education students, means that you are giving these students the same education that you are giving the on-campus students.

I do not propose to examine the flaws in that assumption here, but suffice it to say that the whole basis for the structuring and design of Distance Education material, specifically trying to meet the needs of Distance Education students, arises from the recognition of their different backgrounds and of the very different circumstances in which they study.

It is that flaw in the assumptions behind the New England model that can lead to major slippage in the educational provision that results. However, let me take most of the rest of this story from my experience at Griffith.

On-Campus Courses

In spite of their vast differences there are a number of interesting parallels between Griffith University and The Open University. They are both, in spite of the later development of Griffith, creatures of the dissatisfaction with universities that was being voiced in the mid to late 60s. In order to avoid some of the problems perceived in existing universities both institutions attempted to abandon the traditional departmental structure of universities. In the event The Open University basically failed in this endeavour, although Griffith, to date, has appeared to succeed. However, an important feature of the academic programs in both institutions is the interdisciplinary foundation course in each school or faculty. So Griffith staff were faced by the same design problems that faced the early staff at The Open University. Not surprisingly, Griffith also adopted a team approach to the solutions of these problems. Perhaps more surprisingly, Griffith also included an educational developer on its teams.

I propose to discuss two structures for foundation courses that were adopted by different Griffith Schools, and one structure that was used at Griffith as the initial idea for the main studies program (2nd and 3rd year). At Griffith the foundation course occupies the whole of the first year of study for students in the particular School and is compulsory for students in that School. As an aside this means the Griffith foundation courses are approximately twice the size of The Open University foundation courses. At Griffith the courses beyond first year are called the main studies program.

The first structure that I wish to talk about was that used by the School of Science. In this a single development (from simple to increasingly complex states of matter) was achieved by linking sections of material taken from different discipline areas. The structure is illustrated schematically in Figure 2. From this you can see that any particular block might be linked to more than one section feeding into the block, but also might link to more than one different section of material following the block. One interesting function that the educational developer played was to demonstrate to the team that some of the assumptions embodied in the links from one block to another could not be achieved with the sequence of blocks originally designed. Put more concretely, some blocks were assuming material that had been covered in other blocks, but the second block in fact was occurring at a later time in the program. This was remedied by rescheduling the blocks.

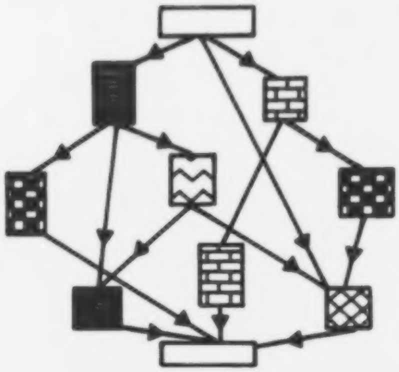

Figure 2.

As with The Open University, slippage could clearly occur in the detailed development of each block by the incorporation of irrelevant material, as well as by the failure to fulfil the links to the other blocks. The slippage was, of course, considerably more difficult to control, as the material was to be presented in the traditional lecture format. In the first run through of the course the potential problem was considerably lessened by staff sitting in on each other's lectures, so they were conscious of the links that they had to make. However, by the second year the program was offered this was becoming increasingly difficult, as staff were involved in teaching courses at other levels. Predictably, even further slippage occurs as additional staff are appointed and assume responsibility for teaching blocks that they had not been involved in designing. Our experience has been that this process proceeds for a few years until the slippage becomes so obvious to both staff and students that a review of the course occurs and the links are reforged.

Another problem, that occurred in parallel with this form of slippage, arose from the proliferation of staff involved in the course. It should be obvious that the greater the number of staff involved the harder it is to make the links. One solution to this problem was to restrict the number of staff involved in teaching and foundation course each year. However, commitment to this decision also decreases over time and administrative timetabling convenience holds sway until, again, the slippage problems become obvious enough to both staff and students to cause a review of the course to occur.

One major slippage (or mismatch problem) that can occur in this course, particularly after it has been redesigned following a review, results from the entry behaviour assumptions. Like The Open University, Griffith University made a decision not to impose subject prerequisites on students. The only exception to this rule has been in the School of Science where a mathematics prerequisite was somewhat reluctantly accepted from the beginning. (A further minor exception is the Science-with-Japanese program, where there is a Japanese language prerequisite.) It is, however, fairly clear that, in spite of the decision not to have a science prerequisite, the course is quite difficult for students who do not have a background in science. Rather than attempt to design the course for a genuine "no knowledge" background, the team has adopted a procedure of supplying remedial tutorials to students deficient in each of the science areas. The effectiveness of this provision and the extent to which the students take advantage of it varies considerably.

The other slippage danger in this School occurs between the foundation course and the second year courses in the main studies program. There is a tendency for staff designing, or teaching, second year courses to design these more in line with their expectation of a disciplinary program than related carefully to the material in the foundation course.

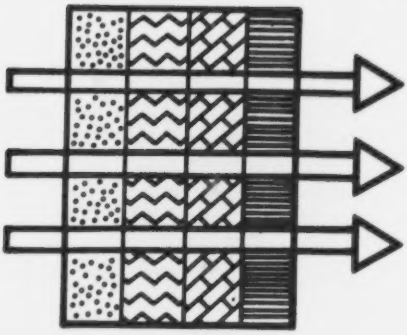

Figure 3

A different structure that was used initially by two Schools, consisted of the parallel development of four more-or-less disciplinary streams. But the teaching program consisted of a series of themes which linked across the parallel developments. This is illustrated in Figure 3. One slippage between intent and outcome that occurred in one of these courses, was clearly demonstrated to the team in the end of year assessment. It was clear at the end of the year that students had completely failed to identify one of the themes. The themes had not been drawn explicitly to the attention of the students and, while they had been designed into the material, it was clear that in one particular case the theme had not been developed at all well in practice. In retrospect this problem was closely related to the times at which staff joined the university. The theme that had disappeared was the responsibility of staff who had arrived rather late on the scene, and therefore had not been as closely involved in the development of the course.

In the other School, slippage of a type referred to earlier occurred. In this case the idea of the themes had looked fine, but had not been explored sufficiently before the course was developed in detail. As a consequence, in the development of the course some of the links between the disciplinary streams turned out to be very artificial indeed. This course also suffered badly from the initial staffing strategy. Here the problem was that the School (Modern Asian Studies) could not initially appoint sufficient staff to carry the disciplines, as well as cover the geographic areas.

The School's response was to staff the geographic area and hope that staff appointed would be able to leave room in the course for the disciplines that had not been represented in the initial staffing. It took some years for staff appointed later to insert their material adequately into the foundation course. This is merely one specific example of the difficulty of one group of staff designing material that is to be used by another.

The last structure that I want to discuss in the on-campus program is, as I indicated earlier, the structure used in the main studies program of this same School. Students were to be given a choice between two types of major study. They could either choose to study a geographic area across a number of disciplines, or study a discipline across a number of geographic areas. The team initially saw this being achieved very nicely with a matrix structure. For example a course in Japanese economics would be used by students who were studying Japanese society from an economics, sociology and history perspective, as well as being used by students who were studying the economic aspects of society in Japan, China and Indonesia. Again, largely because of pressure of time, this structure was not explored in sufficient detail before the individual courses were starting to be designed. In the event it proved quite impossible to design courses that simultaneously fitted those two requirements.

Role of the Educational Developer in On-Campus Courses.

The last section has dealt with on-campus programs. It is quite clear that the dangers of slippage here are much greater than those in a Distance Education program. In a Distance Education program, designed by a team, the team (at least nominally) has access to the material right up to the final stage of production. In an on-campus program, where the main medium of instruction is verbal presentation in either lectures or tutorials, the team can have much less knowledge of what is actually going to occur in the classroom than it has with the Distance Education program. In the latter a misunderstanding by an individual of the intent of the team can be identified and corrected during the detailed production of the package. In an on-campus program this can go completely undetected. Slippage in the on-campus program can occur in two distinct but related ways. Firstly, the actual content covered and the way it is organized can differ considerably from the understanding that the team had. Secondly, the message to students about what is expected of them can be altered quite dramatically from the intent of the team. For example the team's intention could be that students should learn to understand the material and be able to apply it in particular circumstances. The presentation style, however, can convince students that the expectation is that they will learn the material by rote. This is perhaps one of the commonest forms of slippage in both on-campus and Distance Education programs. In a Distance Education program attempts can be made to convince students of the approach to learning that is expected of them, whereas it is very easy for the presentation form in an on-campus program to give students the impression that regurgitating the material presented to them is what is expected. This expectation is, of course, frequently reinforced by another form of slippage. This form, to which I referred earlier, is the slippage in which the assessment items do not match the intent that the team had for student learning.

What, then, of the role of the educational developer in the on-campus program?

As with the rest of the team, access to the detailed material is considerably less than in the Distance Education program. However, there are still materials that are produced in "hard" form. For example, there will be tutorial questions, lecture handouts, and, of course, assessment items. Frequently these (with the possible exception of the last) will not be viewed by the team at all. However, the educational developer can sometimes have access to drafts of these materials and work with individual staff members on them, particularly on their format. It is also sometimes possible for the educational developer to work with one or two of the individual staff members as they prepare their lectures or other teaching sessions. However, staffing levels usually mean that this would not be a feasible activity with all members of staff, even if all were prepared to have discussions with the educational developers at this level of detail.

In the on-campus program slippage can sometimes be detected after it has occurred, but normally only when responses to assessment items are being examined. Unfortunately the results of this sort of slippage (demonstrated in student responses to assessment items) are frequently interpreted by staff as arising from student inadequacies: laziness, low ability, lack of motivation, or lack of preparation. It is only if the course is subject to a fairly thorough review, involving the educational developer, that slippage might be identified as the problem in the course. Even then the review, in order to identify such slippage, might have to be conducted in the subsequent presentation of the course, whereas in Distance Education it is frequently possible to identify these problems by examination of the packages alone.

An approach to the lower "control" by the team in the on-campus situation is to devise "formats" for outlining the intention for courses, and then subjecting the course (intention) description to discussion and comment. Both the design of the pro formas and assistance with the discussion and comment are areas where the educational developer can assist. This approach leads to a different form of slippage; but that's a story for another day.

Distance Education and On-Campus Convergence

As I hinted earlier, at Griffith the two lines of development that I have covered above (Distance Education and on-campus education) have to some extent converged. Over the last five years a unique part-time program has been developed in the School of Humanities. This has used many of the techniques of Distance Education and was designed as quite distinct from the full-time program, in both procedures and content.

The program is completely packaged and involves no lectures at all. There is tutorial provision offered to complement the packages, but the tutorials are not compulsory. This program was, as usual, designed by a multidisciplinary team and used much of the same procedure for curriculum development as discussed above. The part-time program team also encountered the difficulty that The Open University had when using consultants to prepare some of its material; even though, in this case the consultants were other members of the School they had not been closely involved in the preparation of the part-time program.

An important feature of this program has been the deliberate attempt to incorporate flexibility of pacing for students. The dilemma of trying to have students work at their own pace but also supply tutorials, was attacked by two procedures. One was to spread a particular tutorial over a period of time, so that it allowed for the different pace of different students. The other procedure, agreed to by the team, was to reserve some of the tutorials for each package to be offered on demand: if a group of students requested a tutorial on a particular package this could be offered to them. In this case the form of slippage encountered was caused by administrative problems. A rather stretched administrative staff found the work required to organize such tutorials difficult, as well as creating a problem in endeavouring to ensure that staff workload was evenly distributed.

Another interesting slippage from intent to outcome occurred in this program. It was realised that students, because of the nature of the program, were interpreting the minimum progress rules as representing an acceptable rate of progress, rather than as the level of progress below which exclusion procedures were likely to be instituted.

Obviously with this program, the role of the educational developer has been much closer to that in a Distance Education program. In this particular case, because of the attitude of the members of the team, the educational developers have played a more major role than one would encounter even in many Distance Education programs. The work of the educational developers (there were actually three working with the team for a while) was considerably helped by the procedure the team adopted. Particularly in the early planning, team members produced written proposals that were discussed in meetings, revised and collected in a "file" for the program. This ensured that (written) proposals from the educational developers were regarded as a normal part of the procedure.

Conclusion

I have dealt only with some forms of slippage and have very briefly discussed the role of an educational developer in teams developing curricula. It should be obvious that the use of teams implies the acceptance of collective responsibility; the educationdeveloper is one, but only one, member of the collective. It should also be clear that slippage can occur even where an educational developer is a member of the team. It is, however, less likely, and it is more likely to be detected where it does occur.

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Acknowledgments

Clearly I am indebted to my colleagues at both The Open University and at Griffith University, as well as to all those people with whom I have conducted workshops and discussions.

CHAPTER 11

Instructional Design in Distance Education: Promises and Pitfalls

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The need to develop an effective instructional system in Distance Education is particularly significant. According to UNESCO (1985), "This is both an opportunity and a threat. It is a challenge. On the one hand, it is an opportunity to liberate teachers and students from the traditional grind of face to face teaching and immerse them in a rich instructional experience based on a wide range of carefully planned learning experiences. On the other hand, if institutions are unable to respond to the challenge of producing good instructional materials, the lack of quality instruction could lead to fierce public criticism and the ultimate demise of distance education."

Seen from the above perspective, the emphasis on instructional design in current writings on Distance Education can be appreciated from different angles. Firstly, it highlights a desire on the part of distance educators and organisations to maximise learning outcomes through the distance mode of instruction and to transform this channel into an effective alternative to, and an improvement upon, conventional education. Secondly, instructional design has emerged as a characteristic feature of the function of the 'open universities' and it differentiates them from the conventional correspondence institutions. Thirdly, instructional design techniques have contributed to the worldwide recognition of the rich diversity and potential of Distance Education. Their emergence synchronises with the emphasis of shift from "correspondence" to "distance" education during the last two decades. These techniques therefore, form an important milestone in the development of the discipline of Distance Education.

At the same time, I feel that instructional design, as practised today, has several shortcomings which need to be highlighted. In the present chapter an attempt is made to summarise the "why", "how" and "advantages" of instructional design. This is followed by identifying the areas of weakness in the instructional design process designated as "pitfalls". Finally, the situation regarding instructional design in Indian centres of Distance Education is discussed.

Instructional Designing: Why?

Instructional design, as an activity, is not exclusive to Distance Education. In conventional or formal educational settings, teachers are provided with syllabi specifying what to teach. How a teacher will teach is left to the particular teacher to decide. Whether to use lecture or discussion methods, project or assignment methods, slides or films, diagnostic or remedial measures, is largely decided by each. In other words, teachers design their own instruction (Gagne and Briggs 1974). Since face-to-face teaching is basic to formal education, all other considerations are secondary. The teacher can vary methods and strategies depending upon the learner's needs about which feed back is readily available. In Distance Education however, face-to-face teaching being absent, "how to teach" becomes crucial to the success of the entire system. This is so because learning materials are prepared in advance and the media to support and enrich those materials are also pre-selected. A permanent record is created often at a considerable cost some time before the academic session. Once produced, changes cannot be conveniently incorporated at will in midsession. Naturally, this calls for thorough preplanning. Instructional design is precisely this activity. It involves preparing a blueprint for instructional development and delivery utilising multi-media, multi-disciplinary approaches with the objectives of improving the teaching and learning processes on the one hand and enhancing the potential effectiveness of Distance Education as a system on the other, striking a balance between possibilities and realities.

By following instructional design, organisations and planners can ensure that the salient features of Distance Education are capitalised on effectively, to make learning interesting and rewarding, both from the point of the organisation and the learners. These features, according to Holmberg (1985), are the use of preproduced courses as the main basis of study; the promotion of organised two way communication between the student and the organisation; the planned and explicit catering to the individual study; the cost effective use of the mass media and communication methods; the application of industrial methods for producing materials and the provision of guided didactic conversation.

Instructional Design: how?

Two models have been followed for designing instruction for distance learners. The first is the traditional model. In this approach, instruction is designed after the study materials are prepared by the subject specialists. The academics generate the teaching and learning resources to enrich, embellish and supplement the study materials. This approach is mostly "editorial" in nature. Media are introduced to provide diversion and relaxation from the monotony of the printed word, more as independent, supplementary or complementary materials. The second approach can be described as the "generator" model. It involves systematic "finegraining" and "preplanning" resulting in the generation of interesting and efficacious experiences for the learners. The media are selected on the basis of their individual strengths to be alternatives to the printed word. The media are organically related to the development of the theme or the content and are not merely duplicating or reinforcing what is contained in printed lessons. The subject specialist has no or little say in the selection of the media, their presentation and in organisation of the material.

Accordingly, components of instructional design can be identified. On the basis of the framework suggested by Reigeluth et al. (1978), Baath (1982), Reigeluth (1973), Lewis (1985), Jenkins (1985), Taylor (1986), Kaul (1986), Collett, Kerr and Watters (1988), it can be said that the process of instructional design involves the finegrained analysis of the structure of the subject matter; the assessment of the critical learning attributes of the learners; the specification of the clearly defined learning outcomes; the selection of appropriate learning experiences in a planned sequence; the design of appropriate assessment techniques and instruments based on the principles of self-instruction; the design of relevant diagnostic, remedial and feedback systems; and the design and development of learner support systems/services. The result of the instructional design process is an instructional development "blueprint" outlining what methods of instruction and what instructional media are best suited to a particular course content and specific student population. Such a blueprint also prescribes procedures for instructional implementation, management and evaluation.

Since instruction is a complex process and a number of goals have to be achieved, necessitating the utilisation of different teaching and learning strategies and media, the entire course has to be designed as a system. For this, a "course team" approach is followed. The team comprises subject specialists, instructional designers, audio, video and media experts, graphic artists and editorial staff. This is followed by a finegrained analysis of the course, its structure and topic wise identification of the main concepts, divided into units, instructional objectives and the learning \ experiences, specifying different alternative approaches. This also provides for the identification of the media which would be best suited for the attainment of the learning goals from the point of view of the learners and delineation of evaluation techniques and tests specifying the modalities and stages at which these are introduced. Further, in the light of the above, pupil support services and systems are decided well in advance anticipating the nature of the pupil difficulties before, during or after their course. Lastly, instructional design yields guidelines for supporting the multi-media and multi-disciplinary approaches with the creation of a compatible organisational structure. Without this, the instructional design may not be practically and faithfully implemented in practice.

Instructional Designing: Promises

The advantages of instructional design are numerous. These include: the improvement in the quality of self-instructional materials whereby, educational experiences of the distance learners can be enhanced; the creation of valuable learning resources which lead to quality based instructions; the creation of learning packages composed of study guides, audio and video tapes, etc. which can be used anytime at any place making students self-reliant and accountable for their own learning; the promotion of interaction through self-assessment questions/exercises to test adequacy of self-efforts; the advance estimation of the productive use of learning time by students; the development of learner support services and procedures to fulfil learner needs and ensuring their motivation and persistence; the incorporation of regional and cultural features in the learning materials/instructional packages; the identification of the areas/ topics on which students might require additional support and provision of the support; and the realistic assessment of different types of inputs - fiscal, administrative and technical - required to make the system work at the envisaged level Reigeluth (1973), Rowntree (1983), Bates (1984), Jenkins (1985), Lewis (1985), Smith (1987).

Instructional Designing: Pitfalls

Are distance learning systems developed on the basis of the instructional design blueprint perfect? The answer is "no". If this were true, distance education provided by the open universities and other centres relying on instructional design would be perfect and beyond criticism. The truth is otherwise. If we try to collate the research findings and the experiences of the distance educators, Coldway (1982), Reigeluth (1983), Rowntree (1983), Bates (1984), Holmberg (1982, 1985), Unesco (1985), Jenkins (1985), Lewis (1985), Naidu (1985), Gupta (1982, 1986), Collett, Keer and Watters (1988), the following seem to be the major findings :

1. Despite advance planning and anticipation of the learner's responses and problems, learner participation and voice in the actual process of planning are insignificant. This is mainly so because the learners are not included in the process of instructional design. At the same time, distance educators often eulogise "learner centeredness", "learner autonomy" and "self-instruction."

2. Instructional design has not, by and large, resulted in the enhancement of the quality of interaction between the learner and the organisation. Pupils seldom take initiative to communicate because of numerous reasons (personal, academic, social and administrative); their paths of learning are prescribed in advance while the communication is largely one way and irreversible.

3. The media-oriented communication and approaches to learning which follow as a sequel to instructional designing are mostly indirect and non-interactive. Further, these have been found wanting for inculcating experimental attitudes, generating fresh knowledge and developing an

urge to discover among the distance learners. Thus, higher order learning goals seem practically difficult to achieve even in distance systems based on thorough instructional design.

4. Since instructional design is carried out in advance, it is usually undertaken without sufficient and reliable data regarding the prospective students, their number, characteristics, expectations and orientations. Further, feedback from the field regarding acceptability of courses, difficulties of students, etc, being unavailable, instructional design may be reduced to nothing more than an elaborate exercise on paper.

5. Instructional design has been of great help in preparing precisely precalculated and packed knowledge formatted in modules and readymade for examinations and tests. The learner autonomy which is the quintessence of the distance mode is largely sacrificed under strict scheduling as each can do nothing but comply.

6. Instructional design is based on the false assumption that there exists no communication gap between the thought processes and expectations of the course designers and the course takers. Instructional design, however sophisticated, cannot provide adequately for the great heterogenity among the learners with regard to their background characteristics, experiences, learning histories, orientations and expectations. It is a matter of cutting a coat of uniform size to fit everyone. Thus, the objectives of individualisation of studies and differentiation of studies are defeated to a large extent in the glare of multi-media, prepared packages.

7. Instructional design is based upon another wrong premise on the part of distance educators: that the distance learner, like his counterpart in the formal system, has enough free time and exclusiveness for studying the pre-prepared, multi-media packages of learning materials.
The implications of this for extensive studying, meeting strict schedules for assignments and tests in comparison with halfhearted study and limited media exposure owing to heavy constraints of time, budget etc. (relating to family and job situations) could be significantly serious vis-a-vis pupil satisfaction and gains.

8. Whatever one may say, the quality of instruction eventually depends upon the instructional expertise of the distance educators. There are no good or bad media, no good or bad instructors. Good instructional design may, therefore, be least productive if it is not supported and implemented by involved, competent and innovative distance educators. Conversely, effective distance educators are likely to design their strategies more practically even without an elaborate instructional design. Even before instructional design in the modern sense came to be recognised, successful and satisfying learning experiences were being provided by many correspondence or postal tution centres without relying upon instructional design.

9. Despite switching over to the multi-media approach in Distance Education, often at considerable cost, the ideal media-mix has not yet evolved. This is largely so because the full potential and limitations of the different media are still to be realised and evaluated in comparison to other media in terms of cost, coverage, availability, learning benefits and frequency of usage. Instructional design is likely to suffer in quality because of these inherent limitations since we might tend to rely on particular media for superficial reasons - only to spend more for apparent or marginal benefits.

10. Hardly any research studies have been conducted on the different aspects of instructional design vis-a-vis such variables as enhancement of success rate, increase in enrolment, workloads of the teachers and learners and their role performances, and efficacy of different media to teach a common content etc. The differential contribution of each exercise in instructional design towards the enhancement of success, popularity and effectiveness of Distance Education across academic, vocational and skill based courses needs to be established for different target groups before instructional design procedures can be standardised on the foundations of research.

11. There is at present a general feeling among distance educators and organisations that however desirable and beneficial may be instructional design, it is certainly a costly and time consuming exercise. The relationship between time and cost factors vis-a-vis quality improvement indicators has not been empirically established. On the other hand, very big institutions with huge resource-inputs have been able to make

instructional design a standard procedure for course development and planning. This has led some to suspect that instructional design is just a plank to justify ploughing in huge amounts of money for high-cost, advanced, multimedia technologies which are still in the process of development, with little or marginal improvement in the quality of instruction. Another group of distance educators feels that instructional design by a "team" may provide the much needed safety and immunity from accountability for those at the helm.

12. Adopting a course team approach may, more often that not, highlight the problems due to conflicting views of the members with different backgrounds, styles, specialities etc. Personal biases and attitudes of the members, misunderstandings and lack of sufficient knowledge on the new approaches and their relative effectiveness, group politics and policies, make coordination a difficult task. Compromising on standards and quality may sometimes be the only solutions to save the situation. The inclusion of too many "cooks" can lead to spoiling of the "broth". Caution is therefore called for while composing the team and while mplementing blindly what has been recommended.

Instructional Design in India: Yesterday and Today

"Course planning", which is synonymous in meaning to "instructional design" in India, is a feature of the newly established open universities. Prior to this, instructional design was carried out in most university institutes of correspondence studies (numbering 21 in 1986 and enrolling 400,000 students) by a single member or by a team of course writers.

In the Indian university set up, the courses of study are prescribed by a Board of Studies mostly consisting of teachers in the regular (conventional) departments. The courses of study are framed to suit their needs. The question of deviation from the prescribed courses by the institutes of correspondence education and of adopting a different calendar of activities not synchronising with the dates of university examinations, therefore, does not arise. The staff in correspondence institutes are always under duress to prepare courses in a hurry and to produce the requisite learning material in time for students. The salient features of instructional design have not been adopted by these institutions. This is because of the absence of clear cut policies and guidelines from the government (central and state), the University Grants Commission and the university authorities; the lack of timely and realistic grants/financial assistance from the different quarters; the lack of trained staff and media specialists; the paucity of printing infrastructure and machinery on the one hand and lack of studios and hardware to produce multimedia packages on the other.

This has resulted in the deterioration in the quality of correspondence instruction, increase in the number of nonviable institutes and unfavourable attitudes towards Distance Education as a medium of education (Biswal, 1979; Sahoo, 1985; Gupta, 1982, 1985, 1986; Mulway, 1986; Sarswati, 1986; Datt, 1988; Sujatha, 1988).

The situation has however changed with the establishment of the Indira Gandhi National Open University (IGNOU) in India as a national level institution for the growth and promotion of Distance Education. According to Datt (1988), "Studies about a large number of units in earlier distance education show that units were poorly planned in the initial stages........In this respect, the IGNOU is the singular institution which has planned distance education as a system. The IGNOU is not in a hurry to announce its courses. Meticulous planning and preparation of the course material is done". A beginning with instructional design has therefore been made in India.

To conclude, Distance Education can succeed only if the distance learner is made the central focus of instructional design and distance educators respond to students' requirements not just as learners but as whole persons who need a variety of forms of support in addition to academic guidance (Gupta 1985). As appropriately observed by Smith (1982), ".... to have it otherwise is to confuse the means with the ends, to get the priorities wrong or, at best, do right things for wrong reasons". It is therefore important to look at Distance Education and instructional design from the learner's angle rather than from the organisational angle as has been the past practice.

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CHAPTER 12

The Role of a Distance Education Developer

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In this technological age, it is easy to reach outer space or any part of the world within a relatively short time, but it is still a major problem to transmit knowledge even to our next door neighbours. Most countries still depend on a formal system of education the provision of which cannot meet all the educational needs of the people and/or is not accessible to the majority of the citizens. The largest educational budgets go to formal primary, secondary, technical and post secondary or university education.

As an educational developer, my philosophy of education is that education is not a privilege but a right of all citizens and that every individual has the potential to learn and therefore must have access to learning for the purpose of self improvement, development of fellow citizens and national development.

I believe that education has an intrinsic value to the individual and to the nation. Education is an instrument of socio-economic and political change for the better. Without education, there is ignorance, and ignorance leads to poverty, poverty leads to disease, and disease leads to mortality.

An educational developer should therefore develop educational programs in relation to the socio-economic and political context. I do not necessarily mean that an educational developer should become a politician but each should be responsive to social, economic, political and national developmental needs.

What it means to be an Educational Developer

An educational developer is an agent of socio-economic change and political development. The developer should research and find alternative ways of meeting the educational needs of the people.

Sikhanyiso Duke Ndlovu

I have spent a fair amount of time and had experience in developing educational programs both in developed and developing nations. In 1976 I was Associate Director for Education Research and Development at the State University of New York, Syracuse Educational Opportunity Centre in the United States of America. I conducted research on problems of high school leavers with the aim of creating compensatory education, vocational education and university entry preparatory education.

In 1977 I joined the University of Zambia in Africa as Head of the Department of Correspondence Studies. As Head of the Department I was responsible for assisting full time faculty from various departments in the development of distance teaching course materials and administering the external degree programs for the Bachelor of Education, Social Science, Administration and Law awards and the Diplomas of Adult Education and Teacher Education.

The University of Zambia Correspondence Studies Department was based on the University of New England model in Australia, a dual mode in that it used the full time faculty who taught on-campus, to teach distance students.

As an educational developer, I used persuasion to encourage faculty to prepare course materials. Faculty were made members of the Zimbabwe Professional Committee of the Department of Correspondence Studies and were also on their Schools' Academic Boards. In this dual role, faculty felt that they were overworked and tended to fall behind in their coursewriting and marking for distance learners, indicating the need to provide extra incentives to the distance teaching faculty when using a dual model.

Distance Education Development in Zimbabwe

Zimbabwe is situated in Southern Africa with Zambia to the North, Malawi to the North East, Mozambique to the East, South Africa to the South and Botswana to the South West.

When Zimbabwe gained independence from the United Kingdom in 1980, I returned home to assist in the development of independent Zimbabwe.

There was a great demand for education due to its previous inaccessibility and also due to the return of several thousand school children who had fled the country.

Prior to the development of Distance Education programs, I conducted a needs assessment survey to determine the extent and the major areas of need. The survey showed that the greatest need was in the areas of Junior Certificate, General Certificate of Education (GCE) and Vocational and Technical Education. The formal school system could not accommodate all students.

I then spent six months developing distance teaching programs, individually and through the use of consultants and workshops.

A breakthrough came when Wolsey Hall of Oxford granted us a franchise to use its course materials for the various subjects of the GCE examined by the United Kingdom Examining Boards, such as the University of Cambridge Local Examination Syndicate, the Associated Examining Board, the University of London and the University of Warwick for the Master of Business Administration degree.

The Zimbabwe Distance Education College (ZDECO) was established and registered by the Ministry of Education under the Correspondence Colleges Act in October, 1980. The College has a Board of Directors, an Academic Board, faculty and administrative staff and has about 25,000 students distributed among its six regional branches and learning centres.

Development of distance teaching is a dynamic continuum that requires the developer to be learner centred. The developer must first identify the needs of learners and then select the suitable media of instruction. A multi-media approach is required to fulfil distance education needs. The traditional correspondence education or the "envelope campus" tended to depend only on written course materials. Educational psychologists have demonstrated that learning increases when additional media involving audio and audio visual components are introduced. In Zimbabwe we have made great strides towards introducing multi-media distance teaching through the use of Radio-ZDECO on air, video cassette lessons and the print medium.

We developed the criteria and standards for course writers to follow.

These were:

a. Aims i.e. the broad aims of the course at the beginning.

b. Objectives which should:

   1. be clearly stated and related to the aim of the program.
   2. be precise and specific.
   3. be attainable.
   4. be appropriate.
   5. differentiate between process and outcome objectives.

c. Content which should:

   1. facilitate the acquisition or development of stated objectives.
   2. be relevant to the learners' social, cultural, economic and political environment.
   3. provide a balance between knowledge, attitudes, skills and practical application.
   4. provide a dialogue with the student.
   5. provide suitable language and accurate information.

d. Organisation of content which should:

   1. be properly divided into subsections.
   2. form a logical sequence of ideas from simple to complex.
   3. be integrated to reinforce concepts.
   4. include essential diagrams.
   5. encourage the students to think on their own.

e. Exercises which should:

   1. identify the domain to be evaluated - knowledge, skills and/or practical application of the above
   2. test the stated objectives.
   3. contain relevant concepts, knowledge and skills.

4. progress from simple to difficult questions.
5. include specimen or model answers.

Audio Cassette Recording

To bridge the "tyranny of distance" an audio cassette lesson is an effective instrument. Unlike expensive television, an audio cassette is affordable by most people in developing countries and can be used in rural areas where there is no electricity as batteries are used.

The beauty of giving a lesson on cassette is that the learner is stimulated and motivated by his tutor's voice. According to Robert Gagne (1970), learning is a stimulus response mental activity and hence the audio cassette plays an important role in this regard. Furthermore, the learner can replay the lesson and listen as often as is necessary.

Radio Tutorials

In developing nations, radio is the accessible form of mass media. This point was revealed by the United Nations University Distance Education Centre's survey of 1984. While television may be viable for developed nations, developing nations realise the limitations and choose the media that is appropriate for their situations.

The radio script may be read by the tutor or by a professional radio announcer. The program should not be long or boring but of reasonable length; it should be informative and have short intermissions.

The radio programs are useful not only to the student listener but also to the general public. The effect of serendipity - i.e. unexpected results or use - benefits the general public in various ways.

Contiguous Tutorials

Although by definition correspondence teaching refers to non-contiguous teaching because of separation between the teacher and the learner, distance teaching provides for occasional contact. The contact does not amount to the full time equivalent for the learner as this would defeat the purpose of Distance Education which caters for those who cannot attend full-time formal teaching due to work, family and/or financial considerations. At ZDECO we provide evening and weekend tutorials for our distance learners with an opportunity for the learners to come with questions to their tutors after reading the lesson materials at home or at work during their lunch breaks. Comparisons between the pass rate of candidates who attend tutorials and those who do not attend show a much higher pass rate for the attendees than the non attenders.

Conclusion

Distance teaching does increase accessibility of education to the majority of the people who are not able to attend formal education institutions. Our experience has shown that a multi-media distance teaching approach increases the acquisition of knowledge and learning activity more than dependence on the written medium alone. With our Distance Education development of course writing, audio cassette recordings, radio tutorials and contiguous tutorials, based on the philosophical and conceptual framework described earlier, we have made a beginning. There is now a need for further development and research to provide new ideas and new distance educational methodologies.

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CHAPTER 13

The Role of the Editor as a Course Developer

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This chapter aims at discussing the role of the course developer at the College of Education and External Studies (CEES), University of Nairobi. In doing this, the following aspects of the work of the course developer are highlighted:

- the role of the course developer as a member of the course planning and development team:
- the course-developer as an editor/designer in preparing manuscripts for publication;
- the role of the course developer in testing and evaluation of distance teaching materials, and tutoring.

Introduction

There has been a great up-surge in distance education in Kenya. Government departments and private organisations have established Distance Education systems to deal with increasing educational needs that cannot be met through the traditional school systems. These Distance Education systems have basically been influenced by local needs and local nvironmental issues, among them: the constantly rising population; the constantly rising educational costs that constrain the national budget annually; and the need to provide educational opportunity to both children and adults which all call for the expansion of educational facilities while financial means remain limited.

These Distance Education systems work towards a common goal. They:

- provide access to educational opportunities to people who cannot go to school for one reason or other. These opportunities currently range from post secondary to undergraduate studies;
- use innovative and tested theories of teaching and learning;
- produce instructional materials that are interesting and stimulating to the learners, and which aim at sustaining the interests of the learners from beginning to end;
- build active learning into study materials which puts into consideration the needs and autonomy of the learners;
- use a two-way communication system to support and facilitate student learning as well as assessing students' progress.

The Course Developer as a Member of the Course Planning and Development Team

Developing materials to meet the above objectives at CEES involves team work. The editor, who is also the course developer, is part of the team which includes:

- The Principal; who advises on the necessity and other logistics of the program;
- academic members of the distance teaching department;
- subject specialists who write the lessons;
- a students' counsellor; and
- the course developer who advises on course development, management and production.

Team work begins at the planning stage. These planners have to consider the following aspects of course development among other things. It is their duty to:

- identify the educational needs of the program and decide how they will be met;
- identify the learne'rs need and describe the learner characteristics and how they will affect the program;
- define the general and specific objectives of the program;
- identify the available resources and constraints;
- identify media;
- outline plans of the program, which include:
    - what form the materials will take, whether they will be study guides or self-contained units;
    - media to be used whether radio/audio, print or face-to-face;
    - duration of the program;
    - number of learners to be enrolled;
    - administrative structure;
    - methods of collecting feedback information and how it will be used;
    - budget for the program.

The role of the course developer in course planning and development is partly educational and partly administrative. Very often the subject specialists - who are contracted on a part-time basis - have very little knowledge of distance teaching.

The course developer must work with them to ascertain the teaching effectiveness of the course produced. In this regard, the course developer assumes the role of the future student.

1. What are the Functions of the Course Developer in Course Development?

The functions of a course developer at CEES include:

- finding, briefing and training course writers;
- working with writers to improve the quality of their materials by ensuring that the course materials teach well and that the language and instructions are clear;
- preparing a production schedule;
- preparing materials for print and checking that they are clearly linked with other course components;
- structuring the text and checking details so that it is ready for printing;
- controlling the process of course development.

CEES is currently running a number of distance teaching programs namely:

- The External Degree Studies Program.
  This program was launched in 1986. It has about 600 students all taking the Bachelor of Education degree at a distance.

- The Untrained Teachers In-Service Program.
  This course is for untrained primary school teachers teaching in various elementary schools all over the republic. About 5,000 students are currently taking this course.

- Foundations Course in Adult Education.
  This course is for Literacy teachers and other frontline workers working with local communities. About 3,000 students are enrolled on this program.

All the above courses last from 3 to 6 years.

2. Detailed Planning of Course Materials

The course developer is also involved in the synchronization of the three media used: i.e. print, radio/audio and face-to-face contact. Once the course structure has been defined the course team then apportions certain subject areas to the appropriate medium. Usually the print medium carries over three quarters of the course load.

The audio medium plays a supplementary/complementary role. The audio programs are written and recorded by the correspondence course writers. This is done to ensure that the students hear the voice of their lecturers. The face-to-face sessions are utilized to teach practical areas of the course. Students find these sessions extremely rewarding. The role of the course developer in the selection and use of the media is to synchronize all the media used and to ensure that all portions of the course allocated to each medium are treated.

3. Training Course Writers

a) Who are the writers?

The writers are recruited from institutions of higher learning, local secondary schools and from any other relevant institution. The writers must be qualified in the subjects for which they are appointed to write.

During recruitment the course developer makes sure that the writers meet certain requirements. For example:

- do the writers know their subjects well?
- do they have teaching experience at the level for which they are being recruited to write?
- do they have previous writing experience?
- do they understand the needs of distant learners or the target group?
- are they reliable and able to keep agreed deadlines?
- do they have enough time to write?
- are they willing to attend frequent meetings to discuss their work?

Once the writers have been recruited, the course developer then explains to them the process that CEES uses before materials are approved for use, including vetting or reviewing of manuscripts. The writer is told that once he submits his first draft, it is taken to a subject specialist who advises CEES of any inadequacies. The writer is then asked to revise the draft incorporating all the suggestions made by the reviewer. The course developer also reads and explains the contract or agreement that the writer will sign binding him with CEES.

During training the course developer introduces the writers to the format, style, approach and methods of the course. They are also urged to observe deadlines. Training is usually done in a series of workshops, which last at least two weeks. After training the writers are given correspondence manuals for reference as they write the course at home. Basically the new writers cover the following topics:

- what it is like to learn at a distance;
- writing course/topic outlines;
- including activities and providing feedback in the text;
- writing objectives;
- writing clearly and precisely;
- the administration of the course.

As the writing progresses, the course developer assumes the role of a course designer. He/she checks written drafts to see if the writer is applying the principles of writing distance teaching materials covered during the training.

When helping the writer, the course developer discusses the following with the writer:

- reviewing course/subject outlines;
- explaining and checking whether the writer is applying house style format;
- checking the introduction, which is ideally written after the whole unit is complete;
- establishing link of unit with other units in the course;
- assisting the writer to maintain balance of the unit.

Once the writers have produced the first section of the planned unit, (lesson), they can then work on their own. However, the course developer and writers must agree on dates for follow-up so that the writers have optimum support during the writing process. During the follow-up the course developer checks that the units (lesson) is written at the right level of the learners in terms of content and language difficulty.

The Course Developer as a Designer Preparing the Manuscript for Publication

During the writing process, the course developer will have explained certain rules that govern the general layout, such as heading scheme, illustrations, capitalization, spelling and abbreviations. This is important because if these aspects of the unit are left till the copy editing stage, then the lesson will give rise to a lot of work which may result in wastage of valuable time.

1. General Layout

At CEES the general layout of the lesson is done so that the students will find the text not only attractive but also well balanced to work through. The course developer therefore works with the writer to see that the chapters begin in a new page; that the content is evenly and logically distributed that the writer maintains a balance and a logical sequence of the major topics; and that exercises have a symbol attached to make them stand out clearly for the student to identify.

Listed below are examples of the symbols we have developed:

?	stands for SAQ or self assessment questions which are reflective questions;
◎	is a symbol to identify objectives

☛	is used to identify or emphasise important points that are not to be missed;
✍	denotes a written activity;
📖	suggests further reading
📕	is used to identify summaries in each chapter or subsection.

All the above student activities are meant to create variety in the text so that the student participates actively when studying the lesson.

The course developer therefore inducts the writer into how he (the writer) will make these activities stand out in the printed text.

2. Headings

The course developer also works with the writer to establish a well balanced heading scheme which takes into account the major topics, sub-topics, sub-sub-topics and even sub-sub-sub-topics in the lesson. For example.

1.	main topic
1.1	sub-topic
1.1.1.	sub-sub-topic
1.1.1.1	sub-sub-sub-topic.

This exercise is found somewhat difficult by some writers but once the course developer has explained that all the levels of the main topic have to be indentified and converted into an outline, then the writers find their way. Once the heading scheme has been agreed upon, the course developer discusses with the writers the format they should take —whether to leave headings centred or flush in the margin.

3. Illustrations

The course developer encourages the writers to use illustrations where they are necessary and relevant. The illustrations used should be self explanatory, capture the reader's interest, have instructional value and be an integral part of the text. With the writer, the course developer then works through the lesson to:

- specify the spaces needed for the illustrations;
- indicate where they should be;
- ensure that captions and labels are provided;
- decide whether the illustrations are to be framed, and/or numbered. This last decision does not only add aesthetic value to the illustrations but it also makes them easy to identify in the text.

4. Capitilization, Spelling and Abbreviations

To a person who has not written before, this topic sounds obvious. It is not until such a writer starts writing that he realises that he is for example mixing American and British spelling systems. Therefore the course developer at CEES has drawn up a list of rules for writers concerning capitilization, spelling and abbreviation. If the writers follow these rules then editing becomes less difficult. The writers are therefore briefed on:

- when to use capitals;
- which spellings to use (CEES prefers British spelling system);
- when abbreviations can be used and how they are used.

The course developer encourages writers to underline foreign words and technical terms. For example...

You should plant sukuma wiki before the onset of the long rains.
What does the term random sample mean?

Then the underlined words are either put in italics or bold type in the final copy for learners to notice them easily.

Finally writers are encouraged to use a friendly and conversational style that draws the students close to the study text.

5. Activities and Assignments

In Distance Education, the learner must be actively involved in the learning process. In order to do this, the course developer encourages writers to write so that they are more or less talking to the learner in a friendly and encouraging dialogue. This dialogue should advise students on what to do and how to do it, and encourage the learner so that he does not give up studying.

Some of the activities used in the text to sustain learner interest are:

(a) objectives - which guide the student as to where he is going;
(b) underlining or printing in bold or in italics;
(c) pre-requisites of the lesson;
(d) using symbols;
(e) using bullets to break prose;
(f) in-text questions i.e. self assessment questions (SAQ) which are reflective questions meant to keep the student alert;
(g) self-test questions which help the learner to review and apply knowledge and break up content into manageable chunks;
(h) summaries - which help the learner to see if he has understood the content; and
(i) written assignments the role of which is both diagnostic and prognostic.

The students are instructed to return their answers to the written assignments to the College for marking. Written assignments are used for the continuous assessment of the students and to identify any flaws in the course. This leads to evaluation of the program. Written assignments provide a good tool in giving the learners feedback in Distance Education; the learner must be guided constantly in how to get correct answers and on how to identify and correct his mistakes. Written assignments play this role very well.

6. Briefing Typists, Proof-Reading, Paste-Up and Printing

Once the lesson is written and is ready for production, it is the duty of the course developer to brief the typists to lay out the pages correctly. Giving the typist instructions on page layout and how to maintain the agreed heading scheme, and leave necessary spaces for illustrations and symbols, reduces the editing load and any subsequent typing. The typist is also briefed on the agreed rules of capitilization, spelling and abbreviations.

During proof-reading, paste-up is also done. After that the lesson goes for final corrections and then the course developer submits it to the printing section for running off and dispatch to the learners.

The Role of the Course Developer in Testing and Evaluation of Distance Teaching Materials

The aim of testing and evaluating instructional materials at CEES is to assess their quality before they reach the students.

However CEES has found it difficult to carry out a pretest survey though this would be ideal with the target group. The major constraint here is time and lack of financial and adequate human resources to pretest materials in good time to go to the students. Therefore CEES verifies the validity and readability of the instructional materials during the writing process by using expert judgement.

During the writing process, the course developer urges the writers to explain all difficult and technical terms and illustrate their definitions using examples that are familiar to the learners. The course developer also wants to know from subject specialists whether the writer has included the content elements necessary in writing instructional texts for distant learners. In doing this, the course developer asks the subject specialist to comment on a number of things in the lesson. These include:

1. Objectives

    - their clarity, simplicity, specificity; and
    - whether they are stated in a behavioural way which will help the students to manifest the required behaviour;

2. Content outline and treatment

    - sequence and completeness in relation to the topic;
    - whether content is ordered in logical sequence;
    - whether balance has been maintaned; and
    - whether there are adequate examples to explain the theories being put forward.

3. Inclusion of motivational and instructional devices

    whether SAQs, self-tests, summaries, symbols, taking notes and other forms of quick checks are appropriate to the target group;

4. Language level

    - level of difficulty;

- appropriateness of the language:
  clarity, sentence structure/patterns, dialogue and whether important points have been highlighted;
- readability, and links of lessons, topics and paragraphs in the entire correspondence text.

5. Assignments

As mentioned earlier, the role of assignments is both diagnostic and prognostic. The course developer wants to know from the subject specialist whether:

- questions and instructions are clear;
- the questions cover the entire lesson and whether some sections are not tested;
- there are clear instructions on submitting the assignments.

The comments made on student assignments are useful to the course developer during course revision. Such comments are also useful in the development of the subsequent lessons in the program because the course developer will use them to improve the writing of other lessons in the course.

Finally the aim of generating data on instructional materials from subject specialists is to enable the writer and the course developer to revise the draft texts incorporating the subject specialist's suggestions before the lesson goes to the students. This feedback on study texts also goes to the other writers who are writing subsequent lessons in the same program.

The Role of the Course Developer in Course Tutoring

As we all know, the interaction between the student and the tutor is the backbone of the correspondence study method. This interaction which provides a two way communication enables the tutors to give individual counselling to students on some problems that would otherwise be difficult to tackle through correspondence. This can be done through marking of assignments and meeting students at residential sessions.

At CEES tutors work on part-time basis and are engaged to mark and assign grades to students' written work and also to conduct the face-to-face sessions. The tutors, like course writers, are recruited from relevant institutions of learning. They must be adequately qualified in the fields for which CEES engages them to tutor in. The tutors who are recruited to mark students' assignments are trained by the course developer in:

- how to work through the lesson on which the written assignments are based;
- how to comment and guide students towards better performance (negative comments on students work are discouraged);
- how to give comments that suggest fresh ideas, and different opinions that may not have occurred to the studenst;
- making comments that explain the mark or grade awarded to the assignment.

With the help of the student counsellor, the course developer explains to the tutors about the course. In that connection the tutors are encouraged to counsel students on how to study, when and where to study, and how to combine their correspondence studies with their other economic and social commitments.

Jointly with other members of the distance teaching department, the course developer explains the marking scheme to the tutors. This is important because the tutors need to be co-ordinated in the awarding of marks to similar lessons. Co-ordination is done by calling a one or two day seminar where tutors mark dummy scripts and compare their marks. The questions are then moderated until the tutors reach a consensus. They can then carry live scripts to mark at home.

1. Monitoring students assignments

Students' assignments are handled by the department of the Administrative Assistant. This officer receives the assignments from students and allocates them to tutors according to subject specializations. Once the assignments are marked, the tutor returns the script to CEES. The records clerk working in the Records Section enters the marks and gradesonto master cards for each student. The graded assignment is then returned to the student. The role of the course developer in monitoring the assignments is to check from the records that all the lessons have been tested. Where a written assignment could be missing - which is very rare - the course developer contacts the writer to supply it.

Conclusion

This chapter describes the role of the course developer as a member of the course planning and development team at CEES. During the course planning process, the couse developer advises the team on the structure of the course and the type of staff who will be required to write the lessons.

When preparing the manuscripts for publication, the course developer advises on editorial procedures as well as editing some of the texts until the drafts are ready for printing.

The course developer is also interested in feedback from students' assignments. This feedback is useful to the course developer for identifying flaws that may make the course difficult for learners. The course developer uses this feedback to revise the course and to improve future programs. Tutorial comments generate feedback on continuous assessment activities which are built in the study texts. The feedback generated by tutorials is used by the course developer to improve on the lessons in progress.

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CHAPTER 14

A Course Developer In Action - A Reassessment of Activities In Texts

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Overview

This chapter considers whether authors' pronouncements regarding the role of Activities in texts match their actions in producing distance teaching materials, and how these teaching materials are perceived and used by students. It draws upon the experience of working with course teams at The Open University in the United Kingdom, interviews with academic staff, interviews and surveys of The Open University students and the research literature.

Introduction

Persuasive arguments, designed to encourage authors to integrate questions into distance learning materials have been repeatedly employed by educational technologists. Many of us have endorsed the idea of a 'Tutorial-in-Print' (Rowntree 1973) and assembled notes to guide and inform our colleagues. The following extract, drawn from a memo to The Open University authors is typical:

> "You can simulate this tutorial process by thinking of the hours that students will spend working on your material as time spent in your company. What would you expect them to do during that time? It is unlikely that you would expect them simply to read your material from start to finish without reacting to it in some way or producing anything themselves. You may, for example, ask them to recall items of information, to define concepts, draw together arguments, justify particular statements, consult other sources, interpret data, compare different interpretations of the same data, work out examples, discuss things together and so on. In short, you would

> expect them to exercise certain study skills by which students construct their own picture of the subject and learn to integrate what you have just taught them with what they have just learned before." (Lockwood 1978).

However, whilst the inclusion of Activities became a major characteristic of distance teaching material, there was a distinct lack of evidence to confirm the benefit of their contribution. Some authors observed that the major sources of printed material from which we learn, typically do not have Activities built into them (Jeffcote 1981). Furthermore, it was argued elsewhere (Gibbs, Lockwood, Morgan and Taylor 1982) that much of the evidence which has been used to justify the use of Activities in texts lacks relevance and validity in a distance teaching context. There was thus the danger that educational technologists were perpetuating a plausible but untested practice. An investigation was mounted to explore this aspect of course design.

Socialisation Into Course Team Practice

The Open University course production involves a course team which is responsible for the initial planning, production and presentation of the teaching material. It is a collaborative effort extending over many months in which success is dependent upon establishing and maintaining a close working relationship. For some authors, working within such a team and producing The Open University teaching materials are new experiences. These contributors receive a briefing upon joining The Open University and are given various documents to explain and illustrate the course production process. However, the most powerful influence on their attitudes and behaviours occurs informally in conversation with other authors whilst working within the course team and with colleagues within the university. That environment is critical for their socialisation into course production and the perpetuation of course team practice. It serves to promote consensus concerning the assumptions and expectations associated with the role of Activities in distance teaching texts. These constitute the 'espoused theories' held by authors. During interviews with four authors, who had worked closely in the production of one part of an Open University course, the following assumptions and expectations were identified:

Assumptions behind materials assembled and Activities offered		**Expectations regarding how material is studied and response to Activities**
Activities are an integral part of teaching and simulate a 'Tutorial-in-Print'	-	students will recognise the central place of Activities and will interact with them
Interest and enthusiasm can be created in Activities and conveyed to students	-	students share author excitement, with Activities adding interest and motivation
A variety of formats and types of Activity is available and desirable; this contributes to presentation and intellectual demands	-	different methods of presentation are part of teaching; students will appreciate variety provided
Structure and order embodied in the design of the material will guide and control student learning	-	students will benefit most if they follow the advice, instructions and sequence suggested
The goal is to foster learner independence	-	students will think for themselves and have confidence in views, opinions and arguments they construct.

Author's Pronouncements and Actions
- 'Espoused Theories' and 'Theories in Use'.

The difference between what authors communicate to others with regard to Activities, and what they actually do, as illustrated in their finished teaching material, resembles the distinction between 'espoused theories' and 'theories in use' (Argyris and Schon 1974).

The briefing documents provided to new Open University authors state the 'espoused theories'. Subsequent course team discussion at a course planning stage and when commenting on draft material serves to reinforce them (Riley 1983). However, whilst some strive to realise these 'espoused theories' in the form of a 'Tutorial-in-Print', others adopt strategies that deviate from this concept and which constitute 'theories-in-use'. The two most common deficiencies are: firstly, to underestimate grossly the time allocation for Activities, permitting additional content to be included, thus inflating real student study time; and secondly, not to pose Activities but bury them in the text with no formal time allocation whatsoever; the effect on student study time is the same. Evidence from a series of interviews (N=23), questionnaires (N=25) and self recorded tapes (N=16), provided by students who had studied such written material , revealed a gross mismatch between authors' 'espoused theories'/'theories in use' and students' perception and use of Activities.

Extremely few regarded Activities as an integral part of the teaching material. None indicated the excitement and enthusiasm that authors had tried to communicate. Few could identify any types or categories of Activity and those that did offered categories and types different from those of the author! The Activities did not provide a structure and order for the study of the materials - summative assessment material fulfilled this role. For a substantial proportion the effect of being exposed to the Activities, and subsequent follow up comments, was to inculcate a sense of deference to the teaching material rather than learner independence.

Perceived Benefits from Activities

Many students could identify potential benefits associated with Activities; these were identified as course focused, self focused and assignment focused benefits (see Mathias 1980). Course focused benefits were those related to learning from the course - the concepts, ideas, arguments under discussion.

Activities were regarded as

> "...... helpful in concentrating your thinking on the major points that have been covered ...... (they) give you greater insight into the concepts of the course ...... deepen your understanding of the units and course readers."

Self focused benefits were those which contributed to the student's learning as a person - challenging preconceptions, introducing new perspectives, creating a questioning and enquiring attitude. The Activities were

> "...... trying to make you take a wider stance and .... think more openly about it and to question your own thinking and to probe your own viewpoint ..... to make it clear what assumptions you had or have. "

Assignment focused benefits were those directly linked to summative assessment - those which contributed material to their assignments or their thinking about them.

> "...... if I think this is going to get me thinking more clearly about the issues at stake in the assignment then I might attempt it .... it's got to be relevant to the (tutor marked) assignment."

Costs Incurred by Students from Activities

The effect of authors' 'theories in use' with regard to Activities was to create costs that for many students outweighed the benefits they offered. The most obvious was concern over available study time; it pervaded all student comments and represented a major cost associated with the completion of Activities. The following remark is fairly typical.

> "..... I didn't do (the Activity) really for lack of time rather than it not being a good Activity."

Furthermore, in attempting to reduce or limit this cost by adopting particular study strategies, many students incurred other costs. They degraded Activities, displayed undue deference to the comments of authors and acquired feelings of guilt and inadequacy

Degradation of Activities

One of the expectations of authors was that Activities would encourage students to think about the course material by responding to the various intellectual demands embodied in the Activities. A majority of students Degraded the Activities in two ways. In the first they reduced the intellectual demands of the Activity to a level equivalent to or below their concept of learning (see Saljo 1982).

Some students recognised the demands of the Activity but substituted them for less taxing ones. The following student comments are typical.

> "They're wanting you to analyse the argument in the reading - I haven't got time for that so I just read through and got an idea of what they're saying and thought about it a bit before continuing."

> "It asked you to compare different views and assess the strengths and weaknesses of the two....I didn't bother....I just read them and decided which was the closest to my own view.

In the second form of degradation, students collapsed the question(s) and associated follow up comments that constituted an Activity, focusing on the product of the Activity rather than the process. This action was in marked contrast to the assumptions and expectations held by authors.

The following comment typifies this form of degradation

> "I won't actually get down to doing it (answering the questions in the Activity) because I have got a better comment underneath. We mere mortals and undergraduates know that you blokes have got the best comment so we take yours. You might as well spend ten minutes learning that as sorting your own out."

A similar comment was provided by a fellow student who maintained she just

> "...... read the comment .... because you know it's one way again of cutting down the time and it's all written in the comment anyway so I can't really see the point of slogging through it."

This form of degradation also had the effect of reducing or eliminating the excitement that authors were trying to achieve in their teaching.
For example, a student remarked how

> "I didn't ... give it a chance to surprise me, I just looked, read through that (the question) and I read through that (follow up) straight away".

Many students, whilst maybe not completing the Activity along the lines suggested and in the time suggested by the author, did give it some thought before proceeding to the follow-up comment. For example:

> "I don't ... always put anything down on paper. I will often construct the idea in my mind and they help me to lay out what I think - so they are important."

> "..... it depends entirely on the Activity. Some of them I just look at and do in my head, sometimes I just get a piece of paper and scribble a few notes, other times I am more extensive - it depends what is asked for."

The flexibility evident in the last comment was also noted in a majority of students interviewed; those who indicated that they did not automatically degrade Activities by one particular form or another.

Perhaps the most disquieting aspect of this degradation of Activities is represented by those comments from students that indicate a reluctance to engage in the intellectual activities that authors are trying to stimulate via Activities. During discussions with students about the role of the Activities in texts the following comments were volunteered:

"I don't know if they're helpful or not. Sometimes I feel they get in the way. They make me think. I don't want to think I just want to get on."

> "........ some of them were very good, very searching ..... I think if it were too searching it might be the thing that went."

This is not to say that students do not recognise some of the costs, as the following comment indicates:

> "..... you can't really afford (the time) to broaden your thinking."

This student went even further and explained how responding to Activities could represent a danger in that they could become time-consuming

> "..... if you get over involved."

Deference Towards Authors' Comments

A student's desire to comprehend the material being presented, to understand the ideas or arguments offered by an author, is a fundamental part of study. A disquieting aspect is the deference paid to the comments, views or arguments offered by an author *at the expense of their own.*

The authors of the teaching material maintained they were trying to foster learner independence. The Activities posed in the texts were designed to facilitate this: they offered an opportunity for students to check their understanding, clarify ideas, challenge their previous conceptions. Comments from students indicated that many Activities were used in this way. Indeed, a majority of the students indicated a confidence in their own viewpoint and argument and were prepared to challenge those of the author. For example, one student described how she would not automatically discount her response to an Activity in favour of that offered by an author.

> "..... I have got my own opinion about it - he has got his. Then I will probably think 'Well, why did he get his and I get mine the way it is?' and if I think that my comments are just as valuable as his then I will keep them .... I don't just say, 'Oh, that's it, I have got it wrong'."

Another, when asked whether he would be tempted to disregard his own analysis in favour of those offered by the author, replied forcibly:

> "No, oh no, I won't, no way. I am afraid I have got my view - he's got his ... if the person can't produce good reliable arguments I'm afraid I'm not prepared just to accept it. Anything can be argued for and against ... there are pros and cons. What I tend to do is look at the material."

However, a substantial minority of students, to varying degrees, displayed an undue deference to the arguments of the author - typically disregarding their own in favour of the author's. In this situation a student explained how she would, previously, have thought "Oh dear, I've done something wrong".

However, like several others, she now resolves this potential conflict by regarding such discrepancies as merely 'differences of opinion'. Some, whilst recognising differences of opinion, were more prepared to accept the author's comment rather than try to justify their own.

> "If it was just that I disagreed, as sometimes one does in certain things, then that's fair enough. I mean that's his greater experience which I haven't got."

Another student, describing her reaction when her response was different to that of the author explained

> "I feel rather unnerved ..... I almost feel I must cheat - I must sort of put it down as he thought. I have put it in my answer when in fact I haven't. It's a childish tendency to think I have failed. Quick, I must put that down and pretend I had it... And I do that. I can see myself doing it. It is annoyance with myself really because I am prepared to accept that the person who is giving the comment is giving me some sort of 'right answer'."

Inadequacy and Guilt

Many students, although not regarding the Activities as a central and integral part of the unit, did perceive them as a valid part of the teaching material and believed authors had included them for legitimate reasons. The following comment is typical

> "I'm not saying what's down in the Activity is totally irrelevant, and obviously it isn't or they wouldn't have bothered putting it in anyway, but for me time is of the essence."

Students' decisions to ignore Activities, or to complete them less thoroughly than they believe authors intended, did not produce any positive feelings of being an efficient and skilful student but rather generated feelings of inadequacy and guilt at having to adopt this strategy. Students were aware of the potential role of Activities in their study but remarked

> "Oh, (the Activity) aids your understanding, it certainly does and I'm a fool to myself for not doing it."

> "I thought they were all worthwhile, it's a great shame that I just haven't got the time to give to them."

When students were asked what their reaction would be if Activities were omitted from future teaching material, many said they would feel relieved, it would remove the feeling of guilt they experienced when skimming over or ignoring them. A substantial proportion of students was confidently identified as expressing feelings of guilt or inadequacy in connection with failure to complete Activities.

Concluding Comments

The investigation suggests that whilst authors may reiterate 'espoused theories' regarding Activities in texts, many adopt 'theories in use' which undermine them and in reality there appears to be a mismatch between authors' assumptions and expectations and students' perception and use of Activities.

It would appear that this mismatch stems from the author's desire to produce comprehensive, balanced detailed teaching texts which often become overlength in terms of student study time and counterproductive in terms of enhancing student learning. The goal of creating a learning situation in which students want to interact with the Activities, have confidence in their own views, ideas and arguments, regard themselves as effective and efficient learners, is achieved by relatively few.

The current investigations centred upon a single Open University course, its authors and students. Within the course literature there is no evidence that authors' intended Activities should be completed selectively, that time allocations might be underestimated; nor that the course itself was likely to consume more than the study time appropriate. Furthermore, a senior author within the course team gave comments markedly different from the expectation of students. He assumed that not all Activities, including those hidden in the text, would be completed by the students.

> "I wouldn't expect them to do every bit of it to the same degree, it would take them weeks to do it."

The author was both perceptive and pragmatic. He recognised the constraint of time within which students had to operate. He believed that students have

> '....got to make shortcuts (because the course) is a very heavy course; it makes very heavy demands on them so they're going to look for ways in which they can cut within units and between units."

If these sentiments were communicated to colleagues within the Faculty and within course teams they could influence the assumptions and expectations of other authors with regard to Activities.

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CHAPTER 15

An Educational Developer in Ghana Trains Teachers by Distance Education

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Introduction

In 1981, some 700 pupil teachers entered what the country chose to call the Modular Program to begin a training program that would make them qualified teachers. They did this as an alternative to entering the conventional Teacher Training Colleges.

What is the nature of the program? What is its scope? How is it administered? How are students organised to receive instruction? What problems have so far arisen in the organisation of the program, and what are the promoters doing to overcome these problems? Finally, what is the future of the program, and what lessons can we derive from the experience? The purpose of this chapter is to provide answers to these questions. It is hoped that the data that will be furnished in the process will be a useful addition to the information gathered and which continues to be gathered on the development of Distance Education in Africa. The program is an exercise in innovative educational development, in that it represents a new way of offering teacher education for Ghana which up till that date had been employing the conventional residential method for the purpose. It is also a good example of the system whereby work and study are combined in the life of the working adult.

The Nature of the Modular Program

The Modular Program is a Distance Education program insofar as it uses written instructional materials as the main means of teaching. The instructional materials are divided into modules. A module is designed to support three class-hours of face-to-face teaching plus at least one hour of individualised work. Each module is devoted to an identifiable topic in a subject. Although the modular course is divided into modules, all parts are linked together in such a way that the student can view the subject as a whole and can learn it in a sequential order.

The Modular Program is designed to cover the same content as the conventional teacher training program. This is made possible by two main factors. One is that the two programs are based upon the same syllabus, and the other is that the modular students employ for their reading the same textbooks as those used by the students in the residential Teacher Training Colleges. The only difference that one may find between the two programs is in the manner they prepare students for the final qualification. The conventional system requires students to go into residence and study full-time under personal tutors while the Modular Program allows persons to learn on their own and on a part-time basis while still teaching and living at home.

It is necessary to understand that the Modular Program, as at present organised, is an integral part of the conventional teacher training program rather than a separate entity. It covers the first two years of the present four-year teacher training course. At the end of the two-year Modular Program, the trainees are expected to join the internal students in the residential Teacher Training Colleges for the remainder of the 4-year course. Two reasons have been adduced by the organisers for this arrangement. One is that by joining modular students and the internal students together they can undertake their teaching practice in the same way. The other reason is that, as of now, not all the modules have been written to allow for the students to do all their training by that method. The modular students therefore do their courses partly as external students and partly as internal students.

Scope of the Modular Program

The scope of the Modular Program is reflected in three important areas, namely, in the area of the clientele the program serves, in the subjects it offers, and in the media it employs in delivering instruction. The Modular Program is designed for persons who are already employed in the teaching profession but who did not receive training before doing so. These are designated as pupil teachers, and are normally middle-school leavers who are either unable to pursue the more academic program in secondary schools or who have chosen to make a career in the teaching profession. Available statistics show that there are approximately 80,000 teachers in the system, and that as many as 40,000, that is at least 50 per cent of them, are untrained. This is a serious situation especially when viewed in relation to the damage it could do to the quality of teaching in the first cycle institutions.

The Government of Ghana has chosen this mode of training pupil teachers because of its comparative cost advantage. It is reckoned by the organisers of the Modular Program that it costs about half as much to train a teacher by the Modular Program as to do so by the conventional classroom method. This is in addition to the economic advantage gained from the continued employment of the teachers while undergoing training. As can be appreciated, the pupil teachers continue to contribute to the economy by working and paying taxes at the same time as they are studying.

Only three subjects have had modules written for them. These are English Language, Mathematics and Education. There are as yet no courses in Curriculum Development, Educational Administration, and in the teaching of the different subjects in the Social Sciences, the Humanities and the Sciences. Some of these subjects are organised informally at the local level to conform as closely as possible to the regular syllabus, but these are organised more as enrichment programs than as part of the formal courses.

The media used in delivering the program consist of the written instructional material and some face-to-face meetings. No attempt has yet been made, and such an attempt may not be made in the foreseeable future, to utilise electronic media such as radio, television, video and cassette tapes for the program.

Paucity of funds and staff may have been responsible for the limitation of the scope of the program to this extent. It may, however, be true to ascribe the action to a somewhat deliberate policy on the part of the organisers to keep the scale of the program low so that they would have the opportunity of learning from small beginnings. This, incidentally, was the approach that was adopted by the Institute of Adult Education when it set up the Correspondence Education Program in 1970.

The Administrative Structure of the Modular Program

There are two main types of administrative structure for Distance Education programs in the world. Some Distance Education programs are administered as distinct units by themselves while others are administered as parts of more broadly-based organisations. The Ghanaian Modular Program falls into the latter category. It is a sub-unit of the Teacher Education Division (TED) of the Ghana Education Service (GES).

While the administrative structure into which the Modular Program falls helps to dovetail the program into the overall programs of the Ghana Education Service, it nevertheless has some adverse effects. Being a sub-unit of the Teacher Education Division, staff responsible for the Modular Program cannot on their own take final decisions on matters and readily carry them out.

The head has to refer his recommendations to the Director of the TED who in turn has to wait for the approval of the Director-General of the GES before anything can be done. This situation is bad enough for an organisation whose staff is all local. It is worse when some of the staff, especially the higher echelons of the staff, come from external sources as is the case with the staff of the Modular Program. The Modular Program is assisted in funds by the British Overseas Development Administration, and in personnel by the British Council. These external donors have specific objectives to achieve within a specified time frame. To be able to work within the prescribed schedule, they need to have a reasonable amount of freedom to take decisions and sufficient resources with which to carry out the decisions. The absence of these facilities is bound to have a debilitating effect on the work of the unit.

Organisation of the Modular Program

By organisation is meant the way and in which the students are organised to receive instruction. There are two ways in which the students undertake their learning. One way is by self-instruction and the other is by face-to-face instruction. Both methods are considered important in the scheme of the Modular Program.

As has been mentioned earlier, the written instructional materials are produced in units and modules. These are sent one after the other, rather then in bulk, to the students via their vacation course centres and district offices. The students are required to study the material individually with little or no consultation with their fellow students or tutor except when they attend residential meetings. After studying the materials, they respond to the assignment/s included in the module.

The other way in which the students are organised to receive instruction is by face-to-face meetings. There are two types of meetings, namely, Cluster Group Sessions and Vacation Sessions. Both are residential, but while the former type of session can be held during term times and at the district level, the latter is usually held during vacations and at the regional level. The Cluster Group Sessions are of three days duration and occur twice a term while the Vacation courses (three in number) last 15, 15 and 30 days respectively.

Attendance at these residential face-to-face meetings is considered an essential component of the Modular Program, and a student must have a satisfactory attendance record to complete the course. This is in contrast to the practice in The Open University where the instructional material is regarded as the main means of instruction with the face-to-face residential meetings serving only as a complement.

Problems Confronting the Modular Program

One problem that confronts the organisers of the program is how to satisfy the great demand of untrained teachers for training. Open learning systems, an example of which the Modular Program is, connote in the minds of potential clientele the absence of restrictions on admission. The great number of pupil teachers in the country's educational system therefore felt that there would be places for all those who wanted to take advantage of the modular program when it was established. They were disappointed when, due to insufficiency of resources, the program could take only some, rather than all the pupil teachers who showed the desire and capacity to take advantage of the facility.

Closely related to the problem of limited capacity is the problem of how to select people for the program. Should people be selected on the basis of length of service or on a record of good work and conduct? If one of these criteria is used, and it happens that there are still more people than the program can admit, what other criteria should be used to further select the people for the program? Unfortunately, the organisers of the Modular Program have not as yet been able to solve this problem.

The spatial distribution of the students and tutors also poses problems for the organisation of the program. Students and tutors are scattered all over the country, and this makes it difficult for the organisers to supervise their work adequately. The lack of decentralisation of the organisation makes the situation worse. The program is largely administered by the rather small staff located in Accra. There is an attempt to decentralise the organisation, but this has happened only in respect of the residential face-to-face meetings. The other aspects of the work remain largely unaffected by the decentralisation process. The despatch of most of the study materials to students as well as the processing of students' records is done at the centre.

Distance Education Institutions like The Open University and the National Teachers' Institute in Nigeria have solved this problem by setting up regional and district offices and have equipped them with human, financial and material resources to enable them to do their work. A similar arrangement could help improve the work of the Ghanaian program. The Ghana Education Service, to which the Modular Program belongs, has decentralised offices in the regions and districts. All that the Modular Program has to do is to assign some of its duties to these offices, and as much as possible equip them with resources to enable them to perform these duties.

It is not sufficient to wait till the students attend the residential meetings at their regional and district centres before involving the decentralised offices of the Ghana Education Service in the work. A lot of damage will have been done by the time students and tutors reach the centres for the face-to-face meetings. In any case, the organisation of the meetings themselves leaves very much to be desired. Attempts are made to make the arrangements at these regional and district meetings uniform as if all regional and district centres are the same, and as if the problems the students face are the same all over the country. Further, not much effort has yet been made to use non-print media in the organisation of the sessions. The concentration of students at these centres should have afforded the organisers ample opportunity to use electronic media.

And as the English Language adviser commented,

> "In most districts, the cluster tutors are different from the residential tutors. This has led to problems of repetition of work and work being omitted."

This last problem has arisen mainly because not all the units and modules have been written, and because of this non-completion, no Tutor's Manual has been produced. A Tutor's Manual can guide the tutor to teach by the distance method. A Tutor's Manual can also point to parts of the module which are likely to lead to misunderstanding, and advise how this can be avoided. Without such a guide therefore, it can be imagined how differently tutors have been handling their students both at the point where they mark and grade the students' work and at the point where they teach the students at the residential face-to-face meetings.

We have already alluded to the problem of the non-completion of the modules. Why has this problem arisen? The major reason, to the mind of the author, is the decision of the program organisers to admit students while the writing of the modules is still going on. The simultaneous handling of the two tasks has imposed a great deal of strain on the organisation of the program. Distance Education institutions which are well-endowed with human, financial and material resources have been able to handle these tasks simultaneously without allowing any hindrances to occur in any of the processes. Institutions which are not so well-placed have found it extremely difficult to handle the two tasks successfully. The Ghanaian Modular Program has found the handling of these tasks particularly demanding on account of its slender resource base.

Yet another problem facing the program is that the execution of the program has tended to depend too heavily upon external support. This is not to decry external aid, but to point to the dangers that may occur if proper arrangements are not made to involve local staff in the administration of the program. It is observed that the external advisers assigned to the program are doing most of the work and that there is very little evidence of the involvement of indigenous staff. The effective heads of the program are External Advisers, and the nearest local staff to them is a Clerical Assistant. Some senior members of staff of the Ghana Education Service are involved in course-writing and tutoring, but these are not directly involved in the administration of the program. The Acting Director of the Teacher Education Division who carries the overall responsibility for teacher education cannot be said to be directly involved in the administration and organisation of the program. The highest she can go in getting involved is to make herself available for consultation about policies and about problems that arise from the implementation of the policies. This situation is detrimental to the continuity of the Program, for in the event of the termination of the external aid, there will be hardly any indigenous staff who would have acquired the necessary expertise to take over. The solution to this problem is to find local personnel who have the requisite attitude and capacity and make them understudies to the foreign experts. Such local personnel must be of sufficiently high status in order to maintain the prestige that the external experts may have brought to the program.

The Future of the Modular Program

The future of any program depends not only on its intrinsic value but more concretely upon the resources that it has to make it work. The Modular Program has so far sustained itself as a result of the support it has received from the British Government in the form of personnel, funds, software and hardware. Without this support, it is doubtful whether the Program could have continued in existence. The sheer economic straits into which the whole nation was plunged in the early eighties would have made it impossible for the Government of Ghana to establish and run the program on its own. Indeed, it is reasonable to state that the country will not be able to support the program by itself in the foreseeable future. This means that for the program to continue even on its present modest scale, foreign support is necessary.

At the moment, the organisers are hard put to maintain the present scale of operation. This means that they will find it more difficult to undertake any expansion in the program. It appears that, with their present resources, the organisers will not be able to cover any other subjects than the three already embarked upon. They may not be able to extend distance teaching to the remaining two years of the teacher training program. And it is hard to believe that they can employ any other media apart from those now being used. Finally, they may not be able to mount the Distance Education program which has been envisaged for persons with secondary education who want to train as teachers.

One lesson we can draw from the Ghanaian experience is that it is perhaps advisable to complete the writing of the courses before advertising them and before admitting students. The simultaneous handling of these two tasks, as has been shown in the Ghanaian case and in many other cases in Africa poses a lot of problems for the program. It strains the resources of the organisation, especially where the resources are slender. Neither of the two tasks gets efficiently executed, and this may engender a lot of frustration among the students who may wait endlessly for instructional materials. Many other aspects of the program get neglected, especially, student support services. The cumulative effect of all this is that people lose confidence in the program, and this may cause the demise of the program.

It is hoped that the organisers of the Ghanaian Modular Program will do everything to prevent this situation from occurring. What they have to do is to consolidate what they have already achieved or developed. They will do well to finish off the writing of the three courses already started, improve the organisation of the residential face-to-face meetings, and strengthen the administrative machinery, especially in the area of student support services.

In conclusion, it may be suggested that a full-scale evaluation should be conducted to review what has been done and what is to be done in the future. The full-scale enquiry should cover not only the work of the organisers but the position of the students as well as their tutors

PART FOUR

Towards Clarifying Definitions and a Theory of Development and Design

CHAPTER 16

Educational Development as a Profession

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Introduction

A profession, so the Collins English Dictionary tells me, is "an occupation requiring special training in the liberal arts or sciences". In that sense, is educational development a profession? I want to explore this idea within British higher education, not only because that is where my experience is, but also and more significantly, because those who practise in that field rarely think of themselves as being 'in education'. Rather they are in history, in physics or in whatever subject they happen to profess.

So a profession must have a subject to profess. In the case of educational development, is this subject perhaps pedagogy, andragogy, didactics, education? The perception of these words by the majority of British academics is likely to be that pedagogy has to do with children, andragogy is not even in the dictionary (no, not even in the otherwise so excellent Collins!), didactics is an import from the continent and education is the opposite of training.

It is perfectly true that British universities have managed for a very long time without what the Germans call Hochschuldidaktik (there you are!), as indeed have the Germans. However, recently cracks have appeared in the facade. New demands and new conditions have led to new kinds of courses - new in aims, structure, content and method, and many of these have been far from successful. In fact it is noteworthy that there has been far more innovation in the polytechnics and The Open University where there are educational development units, than in universities where there are not.

The Nature of Educational Development

Until recently, courses in universities have rarely been designed de novo; they have rather grown and evolved in a Darwinian way, where what survived was fit to survive. This tends to make them accident proof, even if educationally they may lack much that is desirable, and it is certainly the case that many of the more recently developed courses, which could not be based on previous courses stretching back over the decades and centuries, have lacked this primitive ability to survive. So perhaps the two facts, that innovations have tended to survive better in polytechnics than in universities, and that polytechnics have educational development units and universities do not, are connected.

The reason for this difference is in itself interesting. The polytechnics, under the aegis of the Council for National Academic Awards, have had to produce detailed course submissions and they found that this was a task that normal academic teachers were not good at. So they set up special educational development units. Strangely, these units have rarely been as active in academic staff development, an activity which would seem closely related. Here the universities have taken a lead, spurred on by a different external pressure, a national agreement with the Association of University Teachers on probationer training. Thus, it would appear that nowhere in Britain do we have a complete effort in educational development, which would involve the development of both courses and teachers. The nearest to it is The Open University where course teams in the process of course development provide on-the-job training for teachers.

The Special Features of Distance Education

There are indeed special features of Distance Education which make it particularly appropriate for systematic educational development. They are that the educational materials used are both permanent and public, in direct contrast to classroom and lecture hall, where most teaching happens through the spoken word and behind closed doors. Permanent materials lend themselves to detailed course design in a way that traditional teaching does not, because it is possible to link systematically objectives, method and content, and to improve the system through field trials and feedback. The public availability of the system also lays it open to public critique and accountability - a powerful incentive for competence and good work.

Course Development and Instructional Design

The rational development of a course is a professional craft, i.e. it involves a combination of art and science at an intellectual level. It also requires educational developers to have considerable interpersonal skills which they use in their interaction with subject specialists. A comparatively small part of the work is at the technical level, i.e. the level of the actual design of learning materials. It is important to make this point, since subject specialists are liable to have the perception that the person sent over from the educational development unit to work with them, is a technician who works at a level below that of an academic teacher. This kind of academic snobbery would be laughable, if educational developers were sufficiently secure in their work to laugh at it. Unfortunately they are not and it is for that reason that I tend to avoid the term Instructional Designer.

Course Teams

The Open University pioneered the idea of course teams, consisting of all the subject experts that contribute to the teaching of a course and one or more educational technologists. While others have lacked the resources for course teams of such size, the need for a collaboration between subject and educational specialists in the creation of good courses has been widely recognized. It is obviously impossible for educational specialists to have even a rudimentary knowledge of all the subjects with which they come in contact on course teams, but it is not too difficult for subject specialists to acquire enough of an understanding for the work of the educational specialist to make communication possible and collaboration profitable. It does however require some training and development of the staff concerned.

Lewis Elton

A Theoretical Basis for Educational Development

An essential aspect of any profession is the existence of a body of knowledge based on research and scholarship. It has for a long time been a criticism of educational research that it did not seem to relate closely to teaching and learning in practice, but this situation changed in the 1970s, when research changed from a scientific to a humanistic paradigm, and in this way led to results which, while perhaps sometimes less reliable, were considerably more relevant to actual practice. Just at that time also, educational development started in higher education and through the integration of theory and practice led to a new discipline - Hochschuldidaktik or, as we say in Britain, Teaching and Learning in Higher Education. Postgraduate courses and PhD theses in this subject have appeared in the past ten years.

Is Education Development a Profession?

We thus can now answer the question in the title of this chapter in the affirmative, at least in higher education and particularly in that part of higher education which is also in Distance Education. Within this new profession we have research, doctoral work and postgraduate training. We also have a number of learned societies. The only aspect of a profession which is seriously missing is that of a career structure. In consequence, good workers in the field find it necessary to seek advancement in other fields, a brain drain which so young a profession can ill afford. So I contend that educational development is a profession to-day; the question is - will it be tomorrow?

CHAPTER 17

Making Sense of Practice: Some Inside-Out Theorising.

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"Reflex," he said, "don't depend on other people's theories." These words were heresy! Here was a group of educational developers sitting around a large table at the Ontario Institute for Studies in Education (OISE), munching lunch and talking about some issues in instructional design. One member of the group had been describing her attempts to apply a published theory to her educational consulting and it hadn't worked - it "didn't fit with my experience - where did I go wrong?"

David Hunt must have had at least half of his new book written then, because that question triggered an impassioned plea to all of us for more self-reflection, more "inside-out" theorizing, and greater valuing of one's own experience (Hunt 1987).

Reflex. Understand myself. Pull out and look at my own ideas, the "inside" ones that often operate unconsciously. Do I have any that are truly my own? Look at my own ideas before I do anything else. How has my experience shaped my ideas? If all this isn't enough, Hunt argues that I have two more "R's" to deal with - **Responsiveness** and **Reciprocality**. Responsiveness, he says, is the "distinguishing feature in human transactions". It shows immediate and unplanned reactions and helps set up the conditions for the two-way transactions. How responsive am I as a designer of other people's learning experinces? Do I need a way of organising my responses? Reciprocality, refers to the two-way, bi-directional nature of human interaction, not the "X causes Y" unilateral model.

If I apply these new three "R's" to myself as a learning designer interacting in a course team, what does this application entail? It entails, in part, adapting and matching to (flexing) someone else's style, e.g. the course content writer's, and then engaging in and responding to two-way interactions. This is distinct from my "doing things to" someone or offering confident prescriptions based on the expertise of others. But I cannot do these highly interactive things effectively unless I know where I'm coming from: unless I do some inside-out thinking and develop organised and conscious responses for the job of learning designer

This chapter is a personal reflex. It will not have polysyllabic scholarly scaffolding. It will not offer definite prescriptions for practice. It will, though, show thinking-in-transition, and some pressure points, some questions, in my current practice. No apology is made for the personal emphasis in this reflection: the experiences that have conditioned the reflection are surely shared by some readers, while others may value the attempt to deliberately surface the "inside".

The reflex is framed in one iteration of the Kolb four stage model of experiential learning (Kolb 1975).

> "The underlying insight of experiential learning is deceptively simple, namely that learning, change and growth are best facilitated by an integrated process that begins with (1) here-and-now **experience** followed by (2) collection of data and **observation** about experience.The data are then (3) **analyzed** and the conclusions of the analysis are fed back to the actors in the experience for their use in the (4) modification of the **behaviour** and choices of new experiences. Learning is thus conceived as a four-stage cycle as shown in Figure 1. Immediate **concrete experience** is the basis for observation and reflection. These observations are

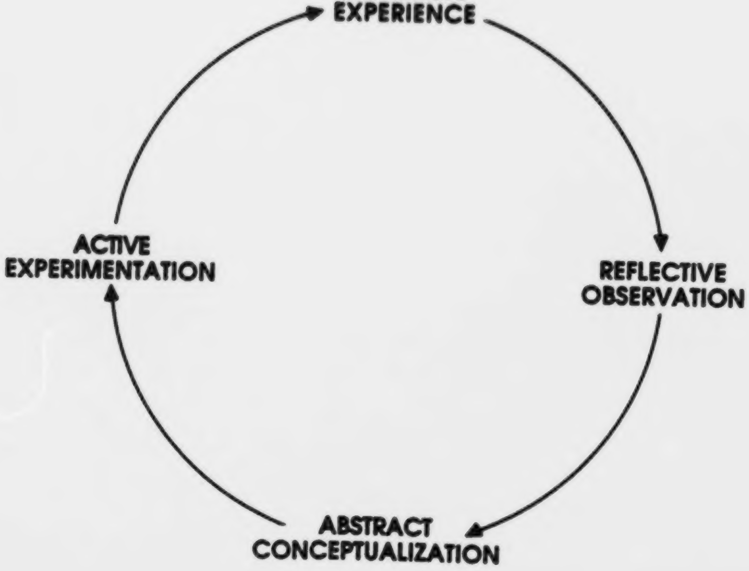

Figure 1. *Experiential Learning Cycle* Kolb 1975.

> assimilated into a "theory" from which new implications for action can be deduced" (Kolb 1975).

Over the past ten years, my "here-and-now experience" has collected into a big heap. But the heap has not kept its organisation - any internal ordering kept changing as each experience was added and information structures changed accordingly.

Let me identify some of those experiences, for none should be regarded as unusual or outdated:

- Dealing with "how-to-do-it" manuals for novice Distance Educators. These manuals focus more on strategies and technical hints than they do on discussions of underlying values, assumptions and principles around adult learning. To date the strategies have not stressed interactions with a wide variety of human and material resources, rather they have emphasised how to implement humanely a transmittal-of-information model of teaching.

- Responding to the shift in educational media research and learning design from behavioral to cognitive, interactive orientations; from looking at which medium in instructional technology is better to asking which attributes could combine with certain kinds of learning (Clark and Salomon 1986), and looking at how information might be structured for active and effective processing. "The designer who is aware of cognitive learning theory is going to be very concerned about the kinds of organisation that will be given to the material presented" (Gagne 1982). She/he will recognize the learners as being very active in their constructions of meaning, rather than passively accepting predigested meanings from others.

- Seeing some course writers undergoing shifts in understanding their function. "I've just realized - my job is to help them work through resources, not to worry so much about just writing out the information." In my jargon that means a radical shift from a transmission model to a transactional model of teaching; i.e. provide the resources for learning, but focus on what the learner will do with them in two way dialogues with tutor, peers, and others.

- Using two way communications technologies such as FAX, audio conferencing (telephone), text conferencing (via computer) and video conferencing. Critical questions for me regarding their educational use are:

  What informational and activity preferences do they bring?

  Can they do anything new?

  Can they do the old and tried better?

  Does their use develop learning skills unique to their medium?

  Which attributes might best match learning style preferences?

- Experiencing the impact of those hard technologies on the softer technologies of learning design and on how people react. The "media-driven" syndrome, shown by pre-determination that a course will depend on, say, audio or video cassettes, is a long standing phenomenon but will we show the same tendencies with more up-scale technology? Two personal experiences with the newer technologies remain powerful. In two versions of video conferencing for example I have felt constrained by seeing the impact of live, two-way video on the participants - both the senders and receivers: behaviour was unusually formal and very conditioned by what were assumed to be the demands of the media. The second experience resulted from my observation of two courses run almost entirely by computer conferencing over the 1985/86 year at OISE. Whilst I experienced the awe, excitement, and sheer convenience of the novice user, and watched the "text-talk", I also began to ask some questions. Why did I feel this method to be a likely addiction? How do I deal with all the messages some of which, to me, were really irrelevant or shallow? How do I track the many threads of discussion? Why did I sometimes feel inhibited about the public-record, permanent nature of the talk? What power relationships were developing ? How did all this fit with existing principles of adult learning developed from face-to-face classroom activity ? What is really unique about computer conferencing that would justify its inclusion in our multi-resource approach to course design?

- Reading reports of research in Distance Education that still rely heavily on positivist paradigms and experimental methods. Many reports end by asking specific questions about isolated variables in the learning process, or looking for some certainties in design prescriptions. My perceptions of the world indicate that real learning experiences cannot be explained, described or predicted in such narrow frameworks: there are too many factors operating in very complex ways. But do we have useful and researchable questions for more naturalistic qualitative paradigms ?

- Seeing the continuing great divide between the literature on adult learning processes and conditions, and the reliance on educational technology theory in the literature on Distance Education. As someone who did not come into Distance Education as an ex-high school or university classroom teacher of young full-time adults, I read some of our literature with amazement and despair - why still so much narrow prescription and description? Why are we still arguing for tutor feedback and student interaction? To an adult educator these processes are so necessary and obvious they hardly need mentioning. What is worth mentioning are the psychological and contextual blocks to learning, the functions of peer learning, the stages in learning experienced by a learner and the variations in leadership style that a sensitive facilitator should be able to use. These factors affect how the learner engages with learning resources and how he/she feels about that engagement.

- Working with graduate level students in distance modes, and facing the challenges in providing highly interactive real-time processes of learning. My involvment with "virtual" classrooms over large distances in audio and computer conferencing has led to chastening questions about what actually happens as learners articulate their learning. How does the reduced cue load affect communications and group dynamics? How do learners use the changed environment?

These eight sets of personal experience have caused a lot of what Kolb calls reflective observation - "action replays", questioning, identifying which experiences were significant and asking why. Using "intuitive leaps" more than rational analysis, and needing a sense of unity and an organised perspective, I eventually distilled the reflections into more general and integrative questions.

- How is my existing use of old terminology limiting my ability to be creative with the new technology ?
- Have I been asking all these years the right questions for designing learning: questions that first take account of all the variables in the adult learning process regardless of context, rather than using the context first as an unconscious excuse for limited thinking ?
- What assumptions, processes and products in learning do I most value and think most relevant for adult learners ?
- If I value the learner centred perspective on learning, how would that view integrate the relationships between the resources in and conditions of learning ?
- Could I visualise how a mass of detail can link together into a relatively simple model ?

The third stage in the Kolb experiential learning cycle, **Abstract Conceptualization**, helped me develop some abstractions and link up the significant ideas.

The map is shown in Figure 2. Clearly, its contents come from more than the musings outlined above; as a whole, it represents use of old knowledge structures, as well as additions and adaptions.

The model has as its central figure the learner - in a process of interaction with appropriate resources for learning. Those resources will be both

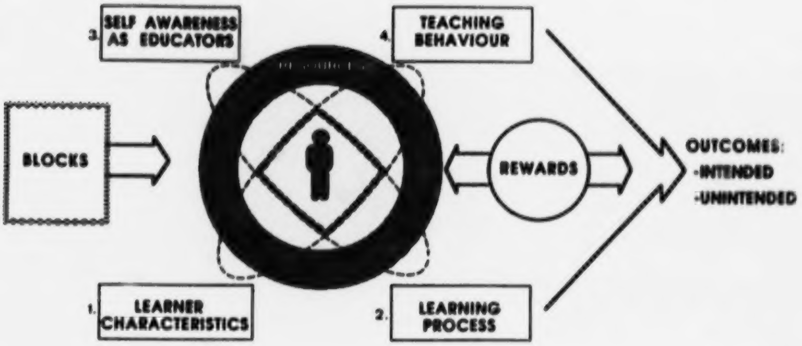

Figure 2 *Conceptual Model*

material - all the software and hardware we know, and human - including the self and all those class peers, colleagues, guest experts, family, educators and tutors who can be approached by the learner for information, confirmation, challenge, correction in learning, and emotional support

That interaction process will be undertaken in two time dimensions - real time (synchronous) and delayed time (asynchronous), shown as elongated circles. Real time examples are audio classrooms, or field experiential projects. Delayed time examples are computer conferencing and reading.

The shaded circle represents the conditions under which those interactions occur. These conditions include structure of course content, amount of choice and responsibility offered to the learner, safety to muddle around and make mistakes etc., stimuli for productive levels of arousal and stress, the extent to which tutor and learner information processing styles are matched, the use of humour etc.

The conditions are influenced by four sets of factors that are both external-to-the learner and internal-to-the-learner. Boxes 1,2,3 and 4 contain those factors.

Box 1 represents the Characteristics of Learners:

- Preferred cognitive and learning styles
- Stages of maturity - in terms of cognitive, psychosocial, ego, and moral development
- Real world time and role pressures
- Learning how-to-learn skill levels

Box 2 represents Learning Processes:

- Psychosocial stages in learning
- Information processing cycles
- Expected and unexpected outcomes

Box 3 represents the Self Awareness of Educator, (the "reflex" ability) in terms of:

- Own preferred styles of learning and thinking
- Own values and model of the teacher-learner relationship
- Own professional competence - strengths and weaknesses

Box 4 represents Teaching or Facilitation Behaviour:

- Habitual models of learning and teaching

- Extent of matching between learning styles of student and teacher behaviours

Boxes 5 and 6 have been placed deliberately to show some key tensions and needs, the restraining and driving forces in the dynamics of learning. As in a Lewin force field analysis, their strength differentials will cause certain movements, positive or negative, within the conditions of learning Lewin 1952). Many restraints may emerge from initial cognitive, emotional and environmental issues in effect at the start of a course - e.g. anxiety about self or institutional expectations, reluctance to "take the plunge", lack of spousal or significant other support, fears of the unexpected, and general ambiguity. Other restraints may come into effect later and may be be coping ones, e.g. withdrawal or ego defence strategies. The learner may be "hanging in" to get a qualification, but feels little enjoyment in doing so; or may be using much energy in hiding studies from family members.

Rewards in learning the driving forces, are fast tutor and peer responses that challenge, correct, and confirm; accurate information, feelings of connectedness, comfort, fun, excitement, enhanced self esteem and mastery. Rewards after learning also apply of course - as intended and unintended learning outcomes (Box 7). These may be as tangible as changes in behaviour knowledge or attitude, or problems solved; or as intangible as internal shifts in values, transformations of old meanings, or an increased sense of self-empowerment in the world.

According to Kolb's experiential cycle, the last stage relates to deducing new implications for experimental action in my practice. His term for this stage is **Active Experimentation**. Having mentally selected a perspective and its significant process components, and accepted the tensions and conditions which influence these components, I had to apply this thinking - develop some congruence between my implicit theory and daily practice.

Some sense of congruence and consistency has been achieved through the following actions.

1. Encouraging course design discussions about learning that are initially context free - i.e. focussed on generic ways of helping adults learn effectively. This means in part, very careful use of language,

an initial suspension of all the known environmental constraints, and consideration of a wide range of learning activities. It means for example talking about both "visual and virtual classrooms", and referring to terms such as "dialogue" with people and materials (the warmware and the software), and "arrival" of the tutor or guest expert - it matters not how they arrive, viz, by phone, walking in, or on the screen. Once the generic is dealt with, one can assess the extent to which the real world context provides new opportunities or imposes old limits on design.

2. Talking openly about the differences in learning styles - as they may be shown in faculty, tutor and learner behaviour.

3. Losing some arrogance about correct design prescriptions and planning as wide a "smorgasbord" of resource formats and learning activities as possible. Giving the learner some real choices; in short, recognising that we individually learn in different ways, will never follow someone else's prescriptions if they do not fit, and have different learning needs. Many of the prescriptions for study skills fit this prescriptive category, and personally, I've never found them useful for my own learning!

4. Asking how I mesh the still strong educational technology - based models of instruction, (e.g. Gagne, Dick and Carey, with their reliance on objectives identification) with the humanistic principles for adult learning design - e.g. relevance to need, relatedness to others, responsibility to self for learning, safe climates, and structured leadership that flexes to the learner's changes during the course.

5. Asking some tough questions about the alleged benefits of the higher technologies: just how learner centred are they ?

6. Maintaining emphasis on the technologies that are convenient and useful for learners - i.e., print, and audio and video cassettes and computer conferencing.

7. Using the term Learning Designer as a move away from the teacher-

centred connotations of terms such as Instructional Designer.

8. Trying to recognise energy shifts and relationship building as two articulations of learning in course design.

9. Using the Kolb cycle in courses so that where appropriate students can generate implicit theory from their own experience and then critically compare their knowledge with that of others. How different from our habitual patterns of always presenting others' knowledge first!

Other outcomes of experimentation apart from a sense of consistency and congruency, have been:

- a greater cognisance of gender-related issues - since educators and learners bring subconscious and conscious socialisations into learning, and act in a very political process that involves the generation and use of knowledge.

- a strengthened conviction that learning designers for adult learning will have to use a wider repertoire of knowledge and skills than many do now. Birkey explains it very well:

> "If learning is not a simple case of individual motivation, but a complex issue of individual development and learning styles often in tension with the developmental level of existing educational environments (Weathersby 1976), then adult educators need to move beyond the specialist's role toward the role of a generalist. As generalists, adult educators should understand the process of learning in a variety of environments and content areas. More importantly, they should be skilled in assisting potential learners in understanding this process" (Birkey 1984).

So a first iteration of the Kolb cycle is now complete. In trying to be my own best researcher in Hunt's terms, **Reflexivity** has helped increase **Responsiveness** and kept **Reciprocality** in clearer focus. In real life, of course, the iterations are not so clear and sequential! But at least Kolb's model has helped draft a personal model - to reflex, to dig out the inside, and to make better sense of my own practice. And David Hunt ? His plea for inside-out theorising has not yet been satisfied, but subsequent iterations of the Kolb cycle should lay some groundwork for theory building. As Hunt said, "there is nothing so theoretical as good practice" (Hunt, 1987). Once my implicit theory is in place, the existing theorists may be invited to try and link my implicit theory with their existing understandings.

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CHAPTER 18

Design Theories for Distance Education

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There is a need for a theoretical base for teaching effectively in Distance Education to help the educational developer and instructional designer. As Baarth (1983,) points out:

> "In education as in other domains, practice frequently precedes theory. To the extent that practice helps generate theory, this is a healthy and even desirable sequence. To the extent that practice without an accompanying theory is random, disordered, and misunderstood, practice may become weak and even unproductive."

As soon as we mention 'theory' we face the dilemma of theories of learning and teaching. In fact, the controversy of instructional theory versus learning theory has been raging for decades. Since our purpose is to understand and improve the methods of instruction in Distance Education, we designers have to concentrate on the task of application rather than on the process of learning. Thus, it would be wise to start with a definition of design.

Herbert Simon (1969) discusses the theoretical and practical (applied) aspects of any discipline and points out the function of "design". According to him, the task of science is to describe "how things are" and "how they work", while the task of application is "design" and "how to make things". He goes on to say:

> "Design, so construed, is the core of all professional training, is the mark that distinguishes the professions from the sciences. Schools of engineering, as well as schools of architecture, business, education, law, medicine are all centrally concerned with the process of design."

Instructional design theory has been characterized as a part of linking science between learning theory and instructional practice. (Dewey 1960; Snelbecker 1974; Reigeluth 1979). Instructional design theories may be either descriptive or prescriptive. Descriptive instructional design theory describes the effects of different instructional design strategies under different conditions. It is not goal-oriented. Prescriptive instructional design theory prescribes optimal methods of instruction for different combinations of conditions and desired outcomes. It shows what the teacher should do in a teaching situation rather than what the students should do. Several educational problems can be solved if the instruction is based on design theories. For example, provision of suitable methods of instruction helps the teacher to give better class presentations, better oral responses to students' questions, and better explanations to slow students who need help.

The question of better methods for teaching is not only an important issue for classroom instruction and formal education, but also a very vital problem in the preparation of any type of written material and instructional program for any kind of medium such as educational films, television, radio or computer programs. Briefly, Distance Education could benefit from design science to improve instructional methods and provide more effective, efficient and appealing instruction.

The theories of instruction which have been used so far have not been able to provide any prescriptive theory or models for teaching effectively in these systems. The review of literature on the methodology of teaching-at-a-distance indicates that practically no research has been carried out in this important area. As Holmberg (1979) indicates, most of the studies stem from two major requirements: first, the need for research on the methodology of teaching-at-a-distance, and secondly the need for research on how to relate generally accepted learning principles to teaching-at-a-distance. Obviously the challenge from the second category must be more attractive since literature is full of these kinds of examples. Baath's (1979) work is one of the examples of this kind. He analysed several teaching models (Skinner, Ausabel, Gagne, Rothkoph, Bruner) in order to find out to what extent they are applicable to Distance Education.

Since the theories of Distance Education developed so far have not been able to provide any prescriptive theory or model, instructional design theories seem to offer some potential for improving the quality of instruction in this system. The theories like Component Display Theory (Merrill, Reigeluth, Faust 1979; Merrill, Richards, Schmidt, Wood 1977) and Elaboration Theory (Reigeluth 1979; Reigeluth, Merrill, Wilson, Spiller 1978; Reigeluth and Stein 1983) are two of the important examples of design science. They include a comprehensive set of models that integrate research-based principles to improve the professional's ability to design better instructions. These two design theories are selected for their relevance to the following important instructional problems in Distance Education.

When developing written instructional materials for Distance Education, clarity in the presentation of textual information in terms of content, readability and teaching effectiveness, should be taken into consideration. These materials, unlike a usual textbook, should include self-teaching elements for students who are working primarily on their own.

Sequencing of the subject matter is another important aspect to be considered. As we all know the textbook as a reference source of information follows a logical sequence which does not help students very much to understand the content. This is a typical pattern that is used by subject matter specialists. As Ausabel (1968) points out, for meaningful learning the subject matter should be sequenced on the basis of the psychological structure of the learners, so that they can grasp more easily the knowledge to be learned.

All effective instructional materials should also include example, practice, overview, and summary as well as strategies for motivating students. In many textbooks either developed for classroom instruction or for Distance Education, these important components of instruction are ignored or are not built into the text properly.

Now, let us look at some important characteristics of these two design theories, and see how they can solve the problems mentioned above. One of the most important contributions of Reigeluth and Merrill is the provision of a comprehensive set of clearly labelled, described and

Condition Variables	**Subject Matter Instructional** **Characteristics Goals** Reference Constructs Structures Multi-Structures **General** Orientation Supporting **Specific** Task-content Classifications	**Subject Matter** **CharacteristicsConstraints** (Not sure) Money Time	**Student Characteristics** Abilities Motivations Self-concept Handicaps
Method Variables	**Organisational Strategies** *Presentation Strategies* Generalities Generality Practice Instance Instance Practice *Structural Strategies* Selection Synthesizing Sequencing Summarizing	**Delivery Strategies** *Fidelity of Representation* *Degree of Interactiveness* *Special Capabilities* *Motivational Aspects* *Costs*	**Management Strategies** *Scheduling* of organisational strategies of delivery strategies *Record Keeping* for management decision for system improvement *Motivation* Extrinsic Intrinsic
Outcome Variables	**Learner Outcomes** *Effectiveness* Accuracy Transfer Speed Retention *Efficiency* *Appeal* Learning Time	**Instructional Institution Outcomes** *Learner Outcomes* *Monetary costs* *Management Demands* *Appeal to personnel*	**Sponsoring Institution Outcomes** *Learner Outcomes* *Monetary Costs* *Appeal to Sponsor*

Figure. 1. Classification of Instructional Variables

classified instructional variables (See Figure 1). This classification helps the designers by indicating what kinds of strategy components should be included in the design, what kinds of condition may influence the effect of each strategy component and how and when these strategy components should be used.

Another important and original contribution of Merrill is the introduction of task/content classification. Bloom (1956) and his associates used an

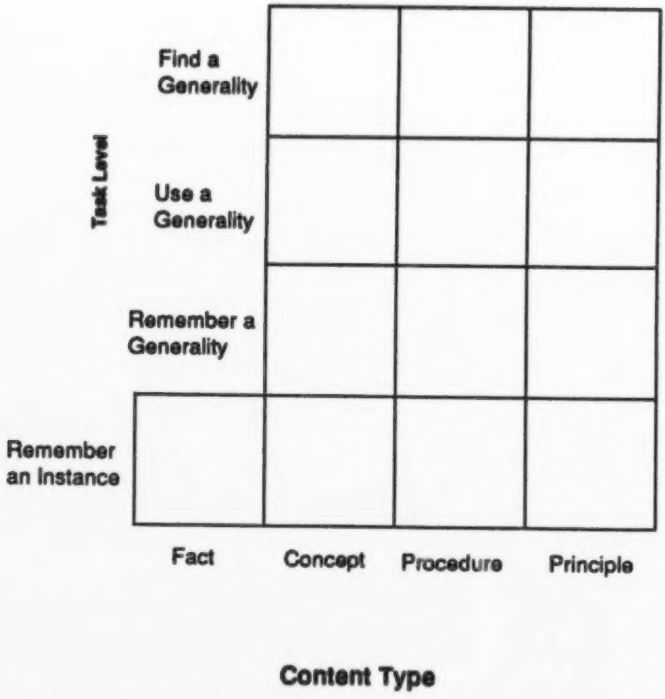

Figure 2. Merrill's Task Content Matrix

object, an event or a symbol), remember a generality (remembering a definition of a concept or a statement of a procedure or a principle), use a generality (applying a procedure or a principle to a new situation) and find a generality (finding a definition of a concept, or finding a new principle) . The other dimension of the matrix shows four types of content which are : fact (a one-to-one association between objects, events, and/or symbols); concept (a class of object, events, and/or symbols which have critical attributes and which have discriminably different individual members); procedure (a series of steps required to produce a specified outcome); and principle (some relationship, usually cause-and-effect, between two or more changes). Merrill's classification is based on the idea that the different types of content can be learned at different levels of behaviour, and different strategies are required for each content type and task level.

As we all know, the major components of instruction are: (1) objectives, (2) presentations, and (3) tests (See Figure 3). The literature on education shows that objectives and tests have received considerable attention,

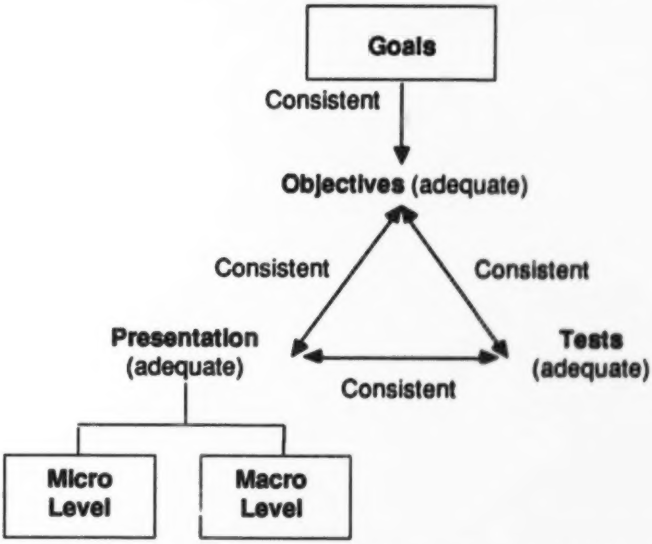

Figure 3. Relations between objective, presentation and tests.

while the prescription of appropriate instructional presentations has been totally ignored or it is generally based on tradition, intuition, or imitation of others' practices. There is almost no information available for judging the appropriateness of instructional presentation for teaching what is required by an objective and its test items. Therefore, most of the presentations are inappropriate. Important presentation strategy variables were first discussed and labelled as "primary presentation forms" by Merrill (1971). Also for the first time the adequacy of presentations and consistency among objectives, presentations and tests were facilitated through the use of task/content classification.

Merrill identifies four primary presentation forms. They are: generality, generality practice, instance, and instance practice. A generality is defined as an abstract or general statement that can be applied in a variety of specific situations such as the definition of a concept, or the statement of a procedure or a principle. Every generality has at least two specific situations associated with it. Instance is the application of that generality to new situations, and practice is applying that generality to different situations (Merrill et al. 1979). He also identifies secondary strategy components which are elaborated or helped by primary presentation forms. They are labelled as helps and include mnemonic help, alternative representation help, etc.

Merrill addresses the following questions for adequate presentation of instructions:

1. What adequate primary presentation forms should be used for teaching at the desired task level? (e.g. for an objective, teaching at remember-an-instance task level, the appropriate primary presentation forms are instance and instance practice).

2. What secondary strategy components should accompany each primary presentation form? (e.g. for the same objective mentioned above, the inclusion of some memory aids like rhymes, chunking devices, etc. helps the students to remember the given instance).

3. What characteristics should each of these primary strategy forms have? (e.g. for an objective at use-a-generality task level, the

instance should be presented with all critical attributes in order to make it possible for the student to compare relevant and irrelevant attributes).

On the basis of all this information we can see that Merrill's instructional model at micro level includes the following components:

1. Information presentation (it could be either a generality or an instance);
2. Example (this should be included in instruction if it is necessary, depending on the difficulty level of the subject matter and/or the ability level of the learner);
3. Feedback: of course, each practice item is followed by immediate feedback.

As a conclusion, Component Display Theory comprises six instructional models. Although the task/content matrix shows only four task levels, the remembering task level is further divided into remembering verbatim and paraphrased subgroups. So, the task/content matrix determines what primary strategy forms should be used at each task level. Therefore, each of the six models requires different combinations of these presentation components on the basis of desired task levels and content types. Also each of these models requires different instructional strategies to optimize learning at that level of cognitive processing.

Another important aspect of Merrill and Reigeluth's work is the introduction of learner control which takes care of individual differences in both formal and distance education. Learner control here connotes different instructional conditions from curriculum selection, objective selection and self pacing. For example, perhaps the greatest contribution is introducing internal control which entails the student's ability to select and use a variety of internal processing strategies as s/he interacts with the presentation.

At macro level, Elaboration Theory prescribes strategies for selecting, sequencing, synthesizing and summarizing the content for a course. It is mainly based on analysis of the structure of knowledge, cognitive processing and learning theories. Reigeluth uses a zoom lens analogy in order to explain the nature of the Elaboration Models of Instruction. A person starts with a wide angle view, which allows one to see the major relationships among these parts - for example the composition or balance of picture - but without any detail. The person then zooms in on a part of the picture. Assume that, instead of being continuous, the zoom operates in steps or discrete levels. Zooming in one level on a given part of the picture allows the person to see the major sub-parts and their interrelationships. The person could then zoom back out of the wide angle view to review the other parts of the whole picture and to review the context of this part within the whole picture. The person continues this pattern of zooming in one level to see the major sub-parts of a part and zooming back out for context and review, until the whole picture has been seen at the first level of detail. Then the person can follow the same zoom in/zoom out pattern for the second level of detail, the third level and so on until the desired level of detail is reached. Similarly in the Elaboration Model, the instruction starts with a special kind of overview called the epitome. Then detail is added to the model in layers across the entire breadth of the content of the course. One level of detail is added to the model at a time. The number of layers of detail depends upon the complexity desired in that particular course. One difference between the zoom-lens approach and the elaboration approach is that the details are actually present in the picture, whereas they are missing in the overview. Elaboration Theory is composed of seven major strategy components: elaborative sequence, learning prerequisites, summarizers, synthesizers, analogies, cognitive strategy activators and also learner control.

In summary, Component Display Theory is a very comprehensive prescriptive theory. It may not be considered as a completely new theory, because Merrill integrated most of the recent knowledge in a way that it would improve our ability to design more effective instruction.
He benefitted considerably from previous knowledge accumulated in other areas, such as performance, task analysis, taxonomies, content analysis, and strategy selection. Merrill's instructional design model of Component Display Theory provide principles for the optimal combinations of presentation strategy components for effective, efficient and appealing instruction at the micro level. The models are highly procedural and also are independent of subject matter. Therefore, they become relevant to all kinds of instruction and training in the cognitive domain.

The Elaboration Theory is also a prescriptive theory which deals with methods of organizing instruction in more than one idea. It is compatible with and complementary to the Component Display Theory. It is mainly based on an analysis of the structure of the knowledge, cognitive processing, and learning theories. It tries to integrate all of the recent studies to make good instructional design theory and hence increase the effectiveness of the instruction at macro levels.

The Elaboration Models are very general in nature. They can be easily applied without any significant change to many instructional situations including Distance Education. Learner control, which is a very important element of both theories (the Component Display and the Elaboration Theory) is one possible solution to the problem of individual differences.

These theories have been adapted to Distance Education in Turkey and are documenied in a study titled "*A Model for Organizing Written Instructional Materials in the Context of a Proposed Model for an Open University in Turkey*".

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CHAPTER 19

Fifteen Years of Instructional Design - A Personal Perspective

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Birth of a Profession

I first met the term "instructional design" when, as I was browsing through the bargain basement of Collins bookstore in Swanston Street in Melbourne I came upon a pile of remaindered copies of David Merrill's anthology *Readings in Instructional Design*. This was in 1974 as I recall. The book held special significance for me then, because at the time I was one of the few people working full-time in instructional design in Australia, although my discipline was not of course called by that name then. This was in the Department of Microbiology at the University of Melbourne.

The position I held had been given the title "Graduate Research Assistant (Audiovisuals)". However, it was essentially that of instructional designer. Its responsibilities included developing display and slide-tape packages to be used in teaching science to medical students. The position was established initially for a period of eight months. It was later extended for a further year. However, by 1974 the economic problems of the Labor government were starting to affect the budgets of tertiary institutions and there was no further funding to extend the appointment. As a result, I found myself back in the discipline of microbiology helping to establish the new department at La Trobe University.

At the time I joined the University of Melbourne, the Centre for the Study of Higher Education was the leading tertiary educational development unit in Australia. Barbara Falk, the Centre's Director was the originator of the concept of establishing educational development units in tertiary institutions and many of the units subsequently established in other universities around Australia had taken their lead from the Centre for the Study of Higher Education. The Centre had incorporated into it an

Audiovisual Service Unit which was involved in the development of self-instructional packages using print, tape and slides. These were a popular innovation at the time and the Centre had a number of projects involving a combination of these media. In the Department of Geography, the a teaching laboratory had been established with slide-tape carrels and in the Department of Social Biology self-instructional packages were being introduced. Another innovation was the development of a training package for users of renal dialysis units.These were pioneering efforts, at least as far as higher education was concerned, and genuinely involved a major component of instructional design. However, at that stage instructional design had not yet earned the dignity of a name.

In 1974, the term Educational Technologist was only just coming into vogue and no distinction had been made between those professionals whose interest was making the most of media instructionally and those whose interest was using the media for instructional purposes. As far as I have been able to discover, the first tertiary educational institution in Australia to recognise officially the termInstructional Design was the Royal Melbourne Institute of Technology. However, this occurred much later.

Instructional design owes its prominence in Australia to the rapid growth in Distance Education in the late seventies.Those interested in the history of Distance Education know that Australia was one of the first countries in the world to accept students into accredited tertiary education courses offered by correspondence. As early as 1911, the University of Queensland began offering. Planners for The Open University sought advice from the University of New England, Macquarie University and the University of Queensland in drawing up the proposals for The Open University. However, in the mid seventies, when institutions - particularly the regional institutions - began to come under pressure to build their student numbers it was to Distance Education that they turned for growth. This led to a rapid increase in the number of institutions teaching at a distance and a rapid increase in the number of students studying that way. Not unexpectedly, quality of course offerings became a focal issue for debate.

In 1975, Peter Smith, who had not long joined the Riverina College of Advanced Education as a research assistant began a study of the factors affecting the drop-out rate of students studying externally. Dropout rates were a matter of some concern to federal funding authorities and a fertile field from which to seek topics for research studies.

The Riverina study differed from that of others which had been undertaken up till then in that it was specifically conemed with students studying at a distance. One of the major conclusions of this study was that it appeared there was very likely to be a link between the drop-out rate and the instructional effectiveness of instructional materials.

In 1976, Keith Smith, Head of the Educational Services Division at Gippsland Institute of Advanced Education invited Dr Bob Ross, Director of the Centre for Advancement of Learning and Teaching at Griffith University to conduct a workshop for Gippsland staff on the design of Distance Education packages. Ross had been appointed from The Open University. He also had a "down-to-earth" approach which suited the academic environment in the regional colleges.

Later in the same year, Peter Smith followed up the results of his research study with a symposium on Distance Teaching at Riverina College on the theme of teaching methodology. The papers from this symposium were subsequently published in a special issue of *Epistolodidaktika(1976-2).*

Also in the same year, The Open University began publication of *Teaching at a Distance* and the Lund University published the first of its reports on teaching methodology and dropouts.

Each of these developments contributed to the development of a climate favouring a larger investment being made in the teaching-learning process.

In 1976, A.E. (Jerry) Grimwade, then the Head of the School of External Studies at the Royal Melbourne Institute of Technology, took study leave in the United States. While on leave, he witnessed the emergence of instructional design as a discipline in its own right. Upon his return, he convinced the Institute of the value of creating a team of instructional designers and the first officially recognised effort at improving teaching and learning in Distance Education in Australia was begun.

The Growth Phase

At the newly-established Deakin University, a parallel development was occurring. Deakin University had been formed with a charter to assume responsibility for provision of Distance Education at University level within Victoria. The foundation Vice-Chancellor, Professor Fred Jevons, had visited The Open University just before taking up his new post in Geelong and had been convinced that Deakin University should model its Distance Education operations along the same lines.

One of the implications of this decision was that the university should place major emphasis on the quality of its teaching materials.

Each of these institutions was grappling with the concept of instructional design. All rightly perceived that there was a new class of educational practitioners who had something important to offer to the educational process, but none managed to create the organisational structure which would enable the potential which these new practitioners offered to be realised.

The institution that really gave meaning to the term instructional design in Australia was the Darling Downs Institute of Advanced Education.
For several years, Darling Downs Institute had been offering a limited but effective program in Distance Education. The Institute offered a number of courses in Business Studies and a Graduate Diploma in Tertiary Education, its total student enrolments amounting to about 500 Equivalent Full Time Students. In 1977, the then Registrar, Dr Rod Treyvaud, who was responsible for administration of the external studies program, spent some time in the United States. Upon his return he convinced the Institute that the future growth in tertiary education lay in Distance Education and that if the Institute wished to take advantage of the opportunities that lay in that direction it needed to upgrade its investment in student and staff support.

Treyvaud gained the support of the Institute's Director, Dr Lindsay Barker, for creating a new Department of External Studies answering directly to the Director.

In May 1977, a project team was set up under Treyvaud to design the new department. Amongst those in the project team were Mike McFarlane, a lecturer in the Department of External Practices and Extension and Dr Glen Postle, a lecturer in the School of Education. McFarlane and Postle recognised the importance of instructional design to the development of quality external studies materials and largely as a result of their contribution the plans for the new department included a major section of instructional design. Their proposal was that the department should include a senior lectureship in instructional design and that the person holding this position should be regarded as second-in-charge in the department. These plans were never implemented.

I joined Darling Downs Institute in January 1978 to take up a lectureship in the Department of Educational Practices and Extension. However, a week before I arrived to take up my appointment the department was disbanded and all but one of its staff were transferred to the new Department of External Studies. I therefore had the privilege of experiencing most of its long and somewhat stormy gestation period.

It is possible to trace the emergence of instructional design as a recognised factor in Distance Education to a landmark decision of an important group of major Distance Education providers.

In 1978, the Australian Regional Colleges (ARC), a lobby group set up to advance the interests of regional colleges of advanced education, held a conference of directors and heads of departments of external studies at Riverina College of Advanced Education. The representatives from the Darling Downs Institute put a proposal to the conference that the ARC should adopt the policy that institutions wishing to be recognised as major providers of Distance Education should be expected to employ at least one full-time specialist in instructional design to assist academic staff in their preparation of course materials.

This without doubt was the turning point for instructional design in tertiary education in Australia.

Over the following two years, first Warrnambool Institute of Advanced Education, then Riverina College of Advanced Education, Capricornia Institute of Advanced Education and Mitchell College of Advanced Education established positions in instructional design. Later these institutions were joined by Orange Agricultural College, the University of Queensland, Gippsland Institute and most recently, by the University of New England.

While on the one hand it was pleasing to those who up to then had been working in an almost totally unrecognised profession to have their specialism thrown into the spotlight, the side effect of the creation of the sudden demand for instructional designers was to create a vacuum in the market. Institutions, having recognised the need and responded to it, were unable to recruit the type of staff they required to satisfy it. As a result many people entered the field at that time without a background in the discipline. Some of these people have since left. However, others have stayed on and have acquired their skills "on the job".

Building a Theory of Instructional Design

The emergence of a new discipline is inevitably accompanied by attempts to assemble a body of theory justifying recognition of the discipline. This is a natural process and ought not to be demeaned. Without a body of theory on which it can be sustained a discipline withers and vanishes.

If instructional design is to emerge from adolescence into maturity as a discipline in Australia, it too needs a body of theory. Instructional design owes its beginnings in this country to the response of institutions to an immediate need. However, urgency has now passed. Those who see themselves as instructional designers must accept responsibility for contributing to the on-going development of its theory.

So what do we mean by "instructional design"?

For a term which on the surface seems to be so clearly descriptive of the function to which it refers the meaning of "instructional design" is remarkably misunderstood. In saying that instructional design is the discipline concerned with the the processes of designing instruction we beg the question. The fault with this explanation is not that it is so trite, but rather that it explains so little. Talking about the processes of instructional design only says something to those who know or who can guess what these processes might be. For most people, indeed even for most teachers, the design of instruction is viewed more as an art than a science.

Yet if we scan the educational literature, we find ample evidence that there are many principles of instruction which have been well established through hypothesis and experiment. These are not the sources that are frequently cited in the educational literature and they tend to be found in the more specialised journals; but they exist nonetheless.

Why is it then that these principles are not understood or in many cases not even known?

To understand why, it is necessary to trace the history of the way in which instructional design originally emerged as a discipline - not here in Australia - but in the United States where it was born.

Origins

The origins of instructional design can be traced back to the immediate post-war years. For the United States, one outcome of the Second World War had been the complete re-equipping of its defence forces with a large range of new and much more advanced weapons systems. The acquisition of these new systems created an acute training problem. To find a solution to this problem, the defence forces set up teams of educational psychologists and gave them the task of developing new training strategies which would be capable of meeting this need.

Leslie Briggs (1980), reflecting on thirty years of instructional design, gives us a personal insight into those early years. Briggs, author with Robert

Gagne of the standard text, *Principles of Instructional Design*, traces his own career back to 1951. In that year he joined the Air Force Personnel and Training Research Centre under Gagne. He later went on to the Hughes Aircraft Company, the American Institute for Research, finally joining the Faculty of Education at Florida State University where once again he teamed up with Gagne.

As Briggs explains, early instructional designers entered the emerging field of instructional design through a range of disciplines: educational psychology, media, curriculum development and evaluation and acquired their skills "on the job".

In the field of military training, the major focus of activity lay in the development of practical skills. Consequently, the early instructional designers devoted their initial efforts to developing job descriptions and undertaking job-task analyses. However, they quickly found that the traditional principles of learning theory such as contiguity and reinforcement and task analysis procedures designed for performance assessment were inadequate for guiding learning in practical training situations. They began developing procedures for learning task analysis. These eventually evolved into the three forms of task analysis that are now the stock-in-trade of instructional designers: information processing analysis, procedural analysis and the elaboration of learning hierarchies.

The early instructional designers soon discovered that learning outcomes could be divided into several separate categories and that each category of learning outcome required different conditions of learning. It was not until much later that Gagne developed generic terms to refer to each of these classes of learning.

Where Should We Look for a Theory of Instructional Design?

As has already been indicated, instructional design has drawn for its inspiration on a number of other fields which are disciplines in their own right. In looking for a theory of instructional design it is easy to stray into one of these related fields and mistakenly believe that instructional design is a derivative field of that field alone. Instructional design has much to do with communication. For historical reasons instructional design has been strongly connected in the past with graphic communication. As a consequence, instructional design is often though to be primarily concerned with appearance; in other words with improvements to layout, better use of headings and subheadings and greater use of diagrams. This is sometimes referred to as textual design. Instructional design is concerned with textual design. However, it is more than that.

Those who have experience with media other than the print medium quickly point out that instructional design is also concerned with use of audio and video instruction and nowadays also with computer based instruction.

Those who have entered the field of instructional design through a curriculum development stream generally regard the essence of instructional design to be found in educational psychology.

What distinguishes instructional design from each of these related fields is the integration of the contributing components.

The central philosophy of instructional design is the result of commitment to the systematic application of well-tested instructional principles rather than the reliance on intuition. This systematic approach incorporates as some of its major stages:

- definition of the intended outcomes of instruction
- analysis of the outcomes to determine the prerequisite skills needed to achieve these outcomes;
- selection of teaching/learning strategies
- assembly of instructional exercises;
- development of test items;
- creation of the instructional package

However, there are numerous other job responsibilities which do not fall exclusively into the province of the instructional designer:

- co-ordinating the production of instructional packages

- designing a course structure
- identifying resources to support the teaching of a course

What is important to appreciate, though, is that these latter tasks are simply some of the components of a multicomponents process. The need to structure course content no more makes a curriculum developer an instructional designer than the need to use statistics makes a psychologist a mathematician.

From the moment that a subject specialist begins putting pen to paper to prepare the draft of an instructional package a process of acquisition of ownership comes into play. As the subject specialist's sense of ownership grows, the instructional designer loses control over the instructional process and slips into the role of commentator or evaluator rather than designer. From this point on, most of the benefits of having an instructional designer involved in the development process are lost.

To interrupt this progression, a way must be found of enabling the subject specialist to advance the development process while ensuring that the products of the process as such will be seen to be jointly owned by the instructional designer and the subject specialist.

The type of product that needs to be sought will be a form of information representation which at the same time as it captures the expertise of the subject specialist puts it into a form which can be used by the instructional designer. To ascertain what form that might take it is necessary to examine what information an instructional designer requires. An instructional designer approaches the task of developing instruction in a different direction from the subject specialist.

Part of the difficulty of talking about instructional design is to be able to explain in a way which can readily be understood just what instructional design is.

We can start by saying what instructional design is not.

Instructional design is not another name for curriculum development, nor is it instructional media production. Instructional design is not the analysis and application of principles of human communication, nor is it a derivative of educational psychology. Instructional design is an interdisciplinary specialisation. Yet it is more than just an amalgam of parts of other specialisations. It is not a cross between other disciplines in the way that biophysics is a derivative of biology and physics and psychometrics is a derivative of psychology and statistics.

Another way of explaining instructional design is to identify what instructional designers work to achieve. Instructional designers work within a conceptual framework which interprets teaching as that which facilitates learning and in turn interprets learning as the acquisition of competencies. The distinction between the concept of learning as the reception and accumulation of information, and learning as the acquisition of competencies, is critical to the understanding of the goals of instructional design.

"Surface Design" and "Deep Design"

The varied origins of instructional design have resulted in the emergence of a dichotomy between surface design and deep design. By "surface design" what is meant is the most immediately evident aspects of design: the layout of the text, the production of an audiotape or videotape. These are the features of an instructional package which are most immediately apparent. They are the features which are judged first.

At Darling Downs Institute, the most pressing initial need was to demonstrate that we had something to offer. It was in the area of presentation that we could achieve the fastest results and so we deliberately chose to bypass deep decisions and go directly to improving the visual appearance of our packages.

Cynics might say that what we were doing was not instructional design at all. Yet the improvement in the presentation of the materials certainly had an impact on students' attitudes to the Institute and to their studies. I keep coming back to the view that the early successes represented the results of tackling the "easy options" in instructional design. To make further improvements we shall have to work a little harder. There is still much room for improvement.

The major developments in the technology of the print-based media are making it very much easier to improve the quality of visual presentation. The television advertisements for the Apple Macintosh attest to what is possible with this technology. However, eventually we shall reach the limits of what can be done to assist the learner through visual design. It is to deep design we need to turn for future breakthroughs in improving the teaching-learning process.

By "deep design" what I am referring to is the underlying structure of the instructional package - the features of the package that make it a worthwhile learning experience for the student. Deep design looks at aspects of the package such as selection and sequencing of practice exercises, the interrelationship of practice exercises, the relationship of feedback to objectives and the relationship between information and instruction.

It is in the area of deep design that the major future payoffs for instructional designers lie.

The Future Role of Instructional Designers

If the roles of instructional designers were being totally determined by institutions, then instructional designers could rightly say that the constraints on their role is a function of institutional perspectives. This is not the case. Instructional designers have the opportunity to shape their own destiny. The future of instructional design is a function of what instructional designers want to make it.

Unfortunately, instructional design has been burdened with myths that are of instructional designers' own making:

- "Instructional design cannot be prescriptive"
- "Instructional designers cannot be partners in the instructional process they must be consultants"
- "Subject specialists can easily become experts in instructional design also"
- "Instructional design is an art not a science"

These myths have held back the potential of instructional design and forced it into a mould which it does not deserve.

Yet technological developments combined with societal need will ensure that instructional design as a discipline continues to grow. The very high cost of development of laser disc software, the untapped potential of Apple's Hypercard - developments like these will force the pace in instructional design. Whether today's instructional designers will lead or follow has yet to be seen.

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Notes on the editor

Michael Parer is Head of Educational Development and Research at Gippsland Institute, now an affiliate of Monash University. His professional interests have broadly been within the areas of instructional psychology and the use of print and non print media for education. He was ordained a catholic priest in 1959 and after working in the traditional parish ministy joined the Australian Broadcasting Corporation initially in the Religious Department and then in Current Affairs. In early 1970s he was asked by the Australian Federal Government to set up the Migrant Educational Television Project. He later spent five years in the United States at the Centre for Innovation in Teaching the Handicapped at Indiana University and from there took up a position as Professor of Education at the Univeristy of Tehran but the political climate forced him to leave after a brief period. On his return to Australia he was appointed Assistant Dean for Course Development at Deakin University. He has conducted research on textual design and student learning, on institutional policy, professional development and other areas as they relate to Distance Education.

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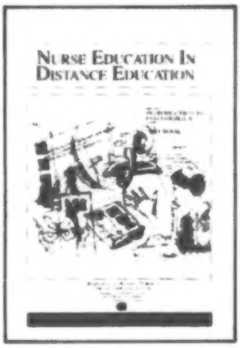

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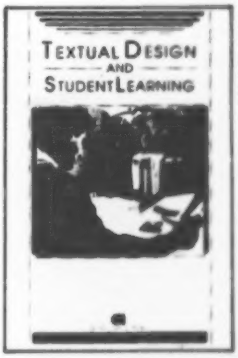

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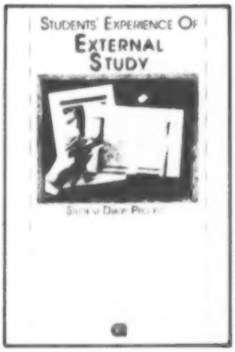

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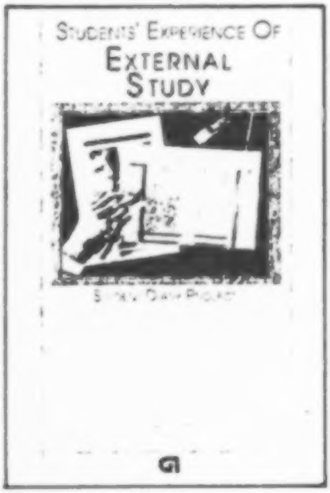

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